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February 15, 2018

Tami Yellico  
Broomfield Director of Strategic Initiatives  
City and County of Broomfield  
One DesCombes Dr.  
Broomfield, CO 80020

***Re: Extraction Development Plan- Response to City and County of Broomfield Comments***

Dear Tami,

We thank you for your comments and we thank the citizens of Broomfield who also took the time to provide thoughts on this project. In the following pages, we have addressed all comments provided to us and we hope to continue the two-way communication process and constructive dialogue we have engaged in to date.

As a general statement, the CDP submittal contains the information called for by Section 9 of our Operator Agreement. The CDP does not necessarily contain every detail as to how we intend to comply with every BMP set forth in the Operator Agreement.

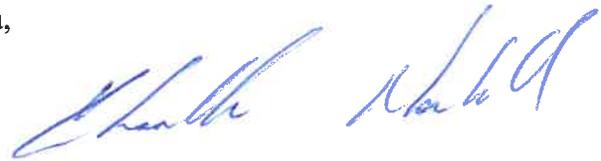
As discussed in our February 7, 2018 meeting, we agree with Broomfield's assertion that the CDP submittal was complete and satisfactorily prepared in accordance with the provisions laid out in our Operator Agreement.

Extraction further asserts that its CDP submittal is in full compliance with the Operator Agreement, and while we agree to continue addressing detailed comments within reason and in a timely fashion, administrative approval of its CDP shall not be unreasonably withheld. We endeavor to continue work with relevant Broomfield departments to obtain necessary permits to move our development forward.

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Please let us know of further questions or comments you have as we progress this development plan and we look forward to timely approval of our Comprehensive Drilling Plan. Provided below is our responses to all comments submitted by City and County of Broomfield.

Thank you,

A handwritten signature in blue ink, appearing to read "Chandler Newhall". The signature is written in a cursive style with a large initial "C" and "N".

Chandler Newhall

### **Response Statement**

On January 22, 2018, Extraction Oil & Gas, Inc. (“Extraction”) received comments to its Comprehensive Drilling Plan (“CDP”) submitted to the City and County of Broomfield (the “City”) on December 15, 2017. The CDP submitted was a compilation of the documents listed in Section 9 of the Amended and Restated Oil and Gas Operator Agreement (“Operator Agreement”) adopted on October 24, 2017. Section 9 of the Operator Agreement states “[t]he Parties agree that Operator has had substantial engagement with the City with respect to its development plans. The Parties agree that, by submitting a Comprehensive Drilling Plan or Plans addressing all Well Sites, the Operator has complied with the City’s administrative process and such Plans are subject to the City’s administrative approval, which will not be unreasonably withheld or delayed.” Extraction not only participated in the eight month long process set forth by Broomfield’s Comprehensive Oil & Gas Planning Committee (“Task Force”) but also, in essence, engaged in an eight month conceptual review of Extractions’ development plan, including all subparts listed in Section 9 of the Operator Agreement. The CDP submitted on December 15, 2017 focused on the first two well sites being developed, Interchange B and Livingston. The CDP for the remainder of the well sites (Interchange A, Northwest A, Northwest B, and United) was submitted on January 26, 2018. Nothing in this response to Broomfield’s comments to the CDP should be construed as a waiver or amendment of any provision of the Operator Agreement or any of the ancillary documents, exhibits or annexes to the Operator Agreement.

Extraction has fully complied in its CDP submittal with the Operator Agreement and requirements for such. The content and substance of the CDP are exceptionally comprehensive, robust, engineered and accurate. The detailed comments provided by Broomfield are addressed below. Extraction intends to continue working detailed comment exchanges with Broomfield in parallel with its State permitting endeavors.

### **Extraction’s Responses to the City’s Comments to the CDP submitted on December 15, 2017**

#### ***General***

- 1. The DP that Extraction submitted fails to comply with Section 9 of the Agreement in that it does not include a detailed site plan for all Well Sites, which is required no later than 30 days prior to the submission of a COGCC Form 2 and/or Form 2A for any New Well or Well sites. For that reason, the City is of the opinion that Extraction cannot submit a Form 2 or 2A permit for any well site at this time.*

**ANSWER:** Extraction has to date complied with all aspects of the Operator Agreement. We have submitted a comprehensive drilling plan that outlines the agreed-upon BMPs and timelines in detail. Our intention is to continue as outlined in the agreement and work collaboratively with all appropriate Broomfield municipal departments per our agreement.

As discussed in numerous meetings, we are working with the state permitting process on a parallel path, considering all the feedback we have received to date from Broomfield and interested residents.

For your further reference, our compliance efforts to date were additionally outlined in a January 24, 2018 letter to Broomfield from Eric Jacobsen, Sr. V.P. of Operations for Extraction.

2. *Please provide a table of the required BMPs from the agreement with a brief overview of how each BMP was addressed or cross referenced to the portion of the application describing how the BMP was addressed.*

**ANSWER:** A table was provided in the narrative of the CDP submitted on December 15, 2017 cross referencing the items set forth in Section 9 of the Operator Agreement and the BMPs cross referencing the Broomfield Municipal Code (“BMP”). In the January 26, 2018 CDP, we submitted yet a second table. While this is not a specific requirement of our agreement, Extraction has nonetheless fully addressed this request.

3. *Per Item 9 (C) of the Agreement, please provide a project schedule for the plugging and abandonment of the 39 existing wells in Exhibit C.*

**ANSWER:** While there is no specific timeline requirement in the CDP for plugging and abandonment (“P&A”) of wells, Extraction has provided the schedule for the P&A operations for those wells identified to be plugged and abandoned as listed in Exhibit C of the Operator Agreement to the Broomfield local government designee. This timeline is of course subject to change somewhat due to timing around issuance of local permits and once Extraction has certainty on the overall project schedule, as well as availability of equipment and crews, etc. It is also subject to Extraction’s discretionary changes to its overall Broomfield development schedule within the boundary of the end date established in the Operator Agreement.

### ***Section 1.0 of DP***

4. *As stated above, Section 1.0 of the DP does not include detailed site plans for all well sites. Section 9 of the Agreement requires a detailed site plan for all Well Sites that includes all documents required to be submitted with COGCC Form 2A, a depiction of all visible improvements on the Well Site and within 500 feet of the proposed location, to include buildings, residences, public roads, trailers, and trails, major above ground utilities, railroads, pipelines, mines, oil/gas/injection/water/plugged wells, water bodies, etc. as required by Colorado Oil and Gas Conservation Commission (COGCC) Rules, and the site plan requirement of the Broomfield Municipal Code, as amended.*

**ANSWER:** All documents required to be submitted with COGCC Form 2A were provided along with the accompanying draft COGCC Form 2A. Site plans were submitted with both the December 15, 2017 and January 26, 2018 CDP submissions and enlarged prints were submitted on January 26, 2018.

Additionally, the COGCC has accepted our permit applications and ruled them complete. Extraction has complied with this requirement.

5. *Please provide a detailed site plan for all wells and well sites of the preparation, mobilization and demobilization, that includes the location of all permanent temporary equipment and trailers and the source for any water to or wastewater from the trailers.*

**ANSWER:** We have provided a detailed site plan in our 2A application. However, both the Operator Agreement and BMC 17-54-050 are clear as to their requirements relating to plans for site preparation, mobilization and demobilization.

Extraction has complied with requirements for submission of site plans and has provided details on permanent equipment for the production phase of this project.

#### ***Section A and B***

6. *See the attached link to the redlined plan set. Engineering Comments*

**ANSWER:** Updated plans per city comments. Comments regarding pond storage and outflow were changed to reflect COGCC's Standard Practices. Specific pond details are outlined in drainage plans.

Extraction has complied by providing a response to all engineering redline comments on February 14<sup>th</sup>, 2018 (Provided two (2) copies and an electronic copy to Broomfield).

7. *Provide additional narrative regarding the proposed utilities, including irrigation water supply, domestic water, reuse water and sanitary sewer (if necessary).*

**ANSWER:** There is no proposed sanitary sewer since this is not a real estate or Planned Unit Development ("PUD"). In response to your request for proposed irrigation, as agreed, Extraction does not plan to use any irrigation water supply because it was agreed to that the open space revegetation or landscaping will continue to consist of native vegetation and seed mixes that can thrive with natural precipitation so as not to draw on the City's municipal and domestic water uses.

8. *Provide two (2) copies of a Utility Report (if necessary) in accordance with Section 100 of the Broomfield Standards and Specifications. This Report is needed to evaluate the*

*existing and proposed utilities associated with the project, including domestic water/fire hydrants, reuse water and sanitary sewer.*

**ANSWER:** Extraction has provided an Electrification Plan for the drilling and production phase in response to providing copies of a Utility Report. Extraction is not installing any sanitary sewer. Presently, Extraction is not using domestic water/fire hydrants but if it becomes part of the plan, it will supplement its Utility Reports accordingly. Extraction has complied with this aspect of our agreement.

9. *Provide two (2) copies of a Drainage Report in accordance with Section 100 of the Broomfield Standards and Specifications. This Report is needed to evaluate the site drainage and should include retention/detention pond calculations and storm sewer pipe sizing.*

**ANSWER:** Extraction has complied. We provided to Broomfield on January 26<sup>th</sup>, 2018.

10. *Provide two (2) copies of a Geotechnical Report in accordance with Section 100 of the Broomfield Standards and Specifications.*

**ANSWER:** Extraction has complied. We provided to Broomfield on January 26<sup>th</sup>, 2018.

11. *Provide two (2) "11x17" copies of the revised construction plans which should be in accordance with Section 160 of the Broomfield Standards and Specifications.*

**ANSWER:** Extraction has complied. The 11x17 prints were provided on January 26, 2018.

12. *Per the Broomfield Standards and Specifications, Road grade should be a min of 1% and max of 7%.*

**ANSWER:** The roads noted are not public roads; they are lease roads. Thus, Extraction will be maintaining these roads and this requirement does not apply. Extraction will comply with our agreement as it relates to access roadways.

13. *Show existing and proposed utilities on all plan and profile sheets.*

**ANSWER:** Extraction will comply, currently we are engaging with Broomfield Engineering Departments to pothole and locate utilities and then will detail on alignment sheets. This will be done in conjunction with the PPIP applications.

14. *Show drainage structures on all plan and profile sheets.*

**ANSWER:** Extraction has complied. We provided updates on February 14<sup>th</sup>, 2018. drainage structures. (Provided two (2) copies and an electronic copy to Broomfield.)

15. *The date of preparation and any revision dates should be listed on all sheets. Some sheets still have xx/xx/xx listed as date.*

**ANSWER:** Thank you for this comment. These plans will be amended to reflect the date and will be re- printed.

16. *The site plan should have the dimensions of all existing streets. If any improvements are planned to streets, dimensions and locations of those changes should be clearly identified on the site plan.*

**ANSWER:** Extraction has complied. This is not required as per the BMC or the Operator Agreement, as the City is aware of the dimension of its streets. However, Extraction will work collaboratively with the departments to provide additional specifications on the alignment sheets.

17. *All easements should be clearly identified and widths of such easements identified.*

**ANSWER:** Extraction has complied. All pipeline easement diagrams were provided, approved and made part of the Operator Agreement. Extraction will work collaboratively with the departments to provide additional specifications on the alignment sheets.

18. *Dimension all driveways.*

**ANSWER:** This requirement is not applicable. The oil and gas operation locations and access roads do not have residential driveways.

19. *Provide surface materials for all areas of site plan.*

**ANSWER:** Extraction has complied. Exhibit S lists surface materials of the CDP site plans.

20. *All structures and equipment should be identified. Provide general dimensions for all equipment and structures.*

**ANSWER:** Extraction has complied. The COGCC Form 2A contains a Facility Layout exhibit. Extraction provided detailed dimensions of all equipment and structures during the Task Force and can resubmit this if needed. (Please see response to question 103.)

21. *Identify the planned colors to be used to paint the facilities.*

**ANSWER:** According to BMC 17-54-100 facilities shall be painted in uniform, non-contrasting non-reflective color tones; color matched to land, not sky, slightly darker than the adjacent landscape. This is consistent with COGCC regulations. According to BMP 14, if Broomfield desires specific colors, it shall notify operator of such color or colors.

We plan to use “Desert Tan,” Pantone 16-1334, coloration for our permanent equipment and temporary perimeter wall unless otherwise instructed by Broomfield.

22. *Identify signage.*

**ANSWER:** Extraction has complied. Operator Agreement has no provision on signage. BMC 17-54-120 requires operator to follow COGCC rules of signage. COGCC Rule 305.g., titled Location Signage, states that “[t]he Operator shall, concurrent with the Surface Owner Notice, post a sign not less than two feet by two feet at the intersection of the lease road and the public road providing access to the well site, with the name of the proposed well, the legal location thereof, and the estimated date of commencement. Such sign shall be maintained until completion operations at the well are concluded.” Extraction will comply. If Broomfield desires something additional, Extraction will work with traffic engineers to accommodate following a written request with specifics.

23. *Identify locations for landscaping. What is the location, species and size of all trees proposed for planting.*

**ANSWER:** It was requested during the Operator Agreement negotiations that the Well Sites should be maintained with consistent native vegetation not requiring irrigation, to maintain the same uniform character of open space. The Visual Mitigation Plan has the landscaping noted consisting of berms. It can be inferred by BMC 17-07 that open lands should only be revegetated to natural native use, thus not irrigated type landscaping.

24. *Are there existing trees at these sites? If so, identify locations and identify if any are to be retained.*

**ANSWER:** There are no identifiable trees at these sites.

25. *What type of irrigation is proposed? Is temporary irrigation used to ensure establishment?*

**ANSWER:** Extraction has complied. No irrigation is proposed or required. During negotiations it was discussed that the vegetation should remain consistent with the natural state, in part, so that the landscaping would not compete with the City and domestic water resources and use. It can be inferred by BMC 17-07 that

open lands should only be revegetated to natural native use, thus not irrigated type landscaping.

26. *Identify the location for any walls and fences. What are heights of these walls/fences? Where are they located? We expected to see some fencing around production equipment for security purposes. Need to know location, material, and height.*

**ANSWER:** Extraction has complied. Fencing is described in the Visual Mitigation Plan and in the COGCC Form 2A. Only the Livingston Pad presently has a chain link fence. Extraction will provide native screening that can thrive with natural precipitation so that the landscaping does not compete with City water sources. Extraction can provide additional security fences around pads.

- a. *If chain link is proposed, you will need to include landscaping to screen view from public street. This is per Page 12 of the agreement BMP Section 23. "If a chain link fence is required to achieve safety requirements set by the COGCC, then landscaping and other screening mechanisms shall be required that comply with the City's Land Use Code regulations and the Operator's safety requirements."*

**ANSWER:** Extraction will utilize berms as native screening of the fencing, which will thrive with natural precipitation so that the landscaping does not compete with City water sources. Extraction will comply and where chain link is utilized for safety or security, landscaping or other screening mechanisms will be incorporated for visual mitigation

- b. *The landscape screen will also require irrigation to sustain the trees and shrubs.*

**ANSWER:** Extraction has complied. Extraction will provide native screening that can thrive with natural precipitation so that the landscaping does not compete with Broomfield water use or sources. It can be inferred by BMC 17-07 that open lands should only be revegetated to natural native use, thus no landscaping requiring irrigation will be installed. Landscape Screen will consist of berms.

- c. *A note should be added to the site plans that all disturbed areas will be revegetated.*

**ANSWER:** Extraction will add a note to the site plans. However, BMC 17-54-140 states that sites should be reclaimed according to COGCC rules.

27. *Are gates proposed at the entrances/openings in the wall? If so, please provide detail.*

**ANSWER:** During the drilling phase, Extraction plans to place security personnel at the entrances of the site. During the production phase, gates will be installed. Extraction will note this once designs are finalized.

28. *Extraction will need to coordinate with City Open Space staff and the farmer that grows crops on the Nordstrom and Davis Open Space properties.*

**ANSWER:** Extraction will coordinate with the farm lease operator.

29. *The revegetation site plans need to show the well sites and stockpiles within the pads as it is hard to determine if the disturbed areas outside of the fencing are being revegetated during the well pad operations. Any land disturbed excluding the area within the walls and road beds needs to be revegetated during the operation of the wells.*

**ANSWER:** Extraction has complied. As noted in the Operator Agreement, interim reclamation will begin once Extraction is in the production phase. We will use a native seed mixture for the revegetation.

30. *Is it workable for the proposed entrance road to the Livingston Pad to be combined with the exit point on Lowell, and the existing oil and gas well road serve as the entry road if it is imperative to have one way traffic? Accessing off of the curve at Sheridan seems to create a dangerous traffic situation and also creates more visual and environmental impacts to the site because of the excessive grading needed to create a safe slope for the entry road.*

**ANSWER:** This is a thoughtful comment, and something that was carefully considered during our planning. The access roads were approved by City Council Resolution No. 2017-186. Specifically, Exh. A., B. and D. note the access roads and entrances. There is no plan for these to be changed at this point.

31. *The Broomfield Pad aka Northwest A and B Pads Site Drawings on the Davis Open Space need to be reconfigured so that each pad site is shown in its entirety on one sheet. It is very difficult to see relationships using the current drawings where only the southern half of the two sites is shown. A drawing showing the overall pad site locations and distances to the Northwest Parkway and residences is necessary.*

**ANSWER:** Extraction has complied. Northwest A & B were shown in the Operator Agreement. Exhibits of these sites have been submitted. The COGCC Form 2A drafts that have been provided contain responsive drawings. A relationship of these sites can be viewed in the Vicinity Maps of the CDP.

32. *The Northwest Access Road needs to be pulled as closely as possible to the NW Parkway to minimize impacts on the Nordstrom Open Space as the Northwest Access Road heads east past the Northwest A and B pad sites to minimize impacts on the farming operation. The Northwest Access Road would then head south as it approaches Huron Street to connect at the current exit point.*

**ANSWER:** This is something that was carefully considered during our planning phase, however was not selected because vehicle headlights would point directly

at residential homes. The location of the access roads were approved by City Council Resolution No. 2017-186. Specifically, Exs. A., B. and D. note the access roads and entrances. There is no plan for these to be changed at this point.

33. *Confirm that the construction of the Northwest Access Pads A and B and the Northwest Access pads do not remove the existing trees on the Davis open Space. Show these trees on the site plans for the Northwest Access Pads A and B and the Northwest Access Pads.*

**ANSWER:** The open space is currently designated as crop lands and utilized as a farm lease, incidentally there are no trees. The access roads were approved by City Council Resolution No. 2017-186. Specifically, Exh. A., B. and D. note the access roads and entrances. There is no plan for these to be changed at this point.

34. *Pull the Northwest A pad east side away from the ditch to maintain a distance of 50 feet. The ditch is already being impacted by the crossing and the access into the Northwest Pad A so additional impacts should be minimized to compensate. Explain why there is so much excavation necessary at the access point into the Northwest A Pad. Can this excavation be avoided by accessing the pad on the west side of the Northwest A Pad enclosure. Move the access points to these pads to the north side of the pads to minimize impacts to the neighbors and site disturbance.*

**ANSWER:** The access to the Well Sites were approved by City Council Resolution No. 2017-186. Specifically, Exs. A., B. and D. note the access roads and entrances. There is no plan for these to be changed at this point.

35. *What screening and landscaping are proposed for the existing wells that will still remain on site on the Davis Open Space, Nordstrom Open Space and the Interchange Pad?*

**ANSWER:** There is no screening and landscaping plans for the existing wells since they will be plugged and abandoned, and removed permanently.

36. *The Interchange Pad Site plans should also show the boundary of the Open Space that is planned for dedication to Broomfield.*

**ANSWER:** Once Extraction conveys lands, the plans will be updated. This will not impact the Interchange Pad Site Plan.

37. *A state stormwater construction permit is needed. A "Field Permit Coverage" may be obtained from the state for all the sites.*

**ANSWER:** Extraction has complied. Extraction's Field Wide SWMP authorization number is COR03MO13. Extraction can provide the permit at the appropriate stage in the process.

38. *A stormwater management plan (SWMP) should be submitted to Broomfield for review. A "Master SWMP" may be submitted for review.*

**ANSWER:** We are currently revising our SWMP and will provide at the appropriate time.

39. *Are there proposed Retention Ponds for stormwater runoff or spill control?*

**ANSWER:** There are proposed retention ponds for water run-off.

40. *Please provide an explanation of the numbering convention used for the wells for the COGCC Form 2 Applications.*

**ANSWER:** The numbering convention is subject to a number of factors, including the location, the formation, the length of the laterals, and other factors according to our internal criteria.

### ***Section C – Project Schedules for All Phases***

41. *The GANTT chart provided indicates that the Interchange A 16 wells are already completed in 2018, when that is not the case and it is a projected completion date. That portion of the chart should have colored bars through the months that are projected for completion consistent with the remainder of the chart.*

**ANSWER:** The portion of the chart you referenced refers only to pad construction, not drilling, completion or full production.

42. *Please provide more detail on the GANTT chart as to the various stages of completion of the pipeline.*

**ANSWER:** Extraction is required to provide a GANTT chart that is consistent with the industry standards and includes our best assumptions as they relate to timing. Until we have further certainty from Broomfield and the COGCC with regard to permits, we cannot confidently make further assumptions as to timing. Section 9 (C) of the Operator Agreement requires a project schedule and this GANTT chart is responsive and has been provided with the CDP.

### ***Section D – Reclamation***

43. *What seed mixture is used for revegetation? Please identify.*

**ANSWER:** It is our practice to work with property owners during interim and final reclamation to determine the most appropriate mixture that best integrates with the surrounding wildlife and vegetation. We look forward to working with Broomfield to determine the City's preferences as they relate to reclamation.

44. *Parks staff in Public Works will need to comment on and approve the permanent seed mixes during the reclamation process. This refers to Table 1. (p. 60) showing Pawnee Buttes Seed Inc., PBSI Premium Irrigated Pasture Mix #2.*

**ANSWER:** Seed mixture is not required under the BMC or the Operator Agreement for approval of the local permit. The lands involved are crop lands as defined by the COGCC Rule 1003d. and only a weed plan is required. The Weed Plan has been provided. With that said, it is our practice to work with property owners during interim and final reclamation to determine the most appropriate mixture that best integrates with the surrounding wildlife and vegetation.

45. *Note on the reclamation site plans in Appendices A and B the seed mix and the steps that will be used to revegetate the site in the interim, i.e., a plan that identifies site preparation, seed type, fencing, seeding, removal of the road base, maintenance that includes weed removal, mowing, reseeding if necessary, etc. This current session is too general and is really not a specific interim plan but just highlights some general concepts. A more thorough plan is necessary.*

**ANSWER:** Extraction has complied. According to COGCC 1003d. all that is required is that all segregated soil horizons removed from crop lands shall be replaced to their original relative positions and contour, and shall be tilled adequately to re-establish a proper seedbed. The area shall be treated, if necessary, and practicable to prevent invasion of undesirable species and noxious weeds, and to control erosion. Any perennial forage crops that were present before disturbance shall be re-established. The BMC nor the Operator Agreement require any variation from COGCC. All of these items have been addressed in the proposed interim reclamation plan submitted. Again, it is our practice to work with property owners during interim and final reclamation to determine the most appropriate mixture that best integrates with the surrounding wildlife and vegetation. We look forward to working with Broomfield to determine the City and County's preferences as they relate to reclamation.

46. *How is this irrigated to ensure establishment?*

**ANSWER:** There will be no irrigation installed as none is required for cropland, which is consistent with the requirements in the Operator Agreement. Extraction will provide native screening that can thrive with natural precipitation so that the landscaping does not compete with Broomfield water use or sources.

47. *Show the irrigation plan on the reclamation site plans in Appendices A and B.*

**ANSWER:** None is required. Extraction will provide native screening that can thrive with natural precipitation so that the landscaping does not compete with Broomfield water use or sources.

48. *The long-term reclamation plan principles should be identified now. It is understood that this plan will not be implemented for some time but at least the elements of the plan should be identified such as regrading, reseeding, addition of landscape materials if appropriate, maintenance practices, etc. If appropriate in Broomfield's opinion when*

*this plan is implemented, the plan principles can be augmented or adjusted to reflect best practices for site restoration at the time. Is “Reclamation Plan X” a model for the final plan? It was not clear how this information related to the well sites in Broomfield.*

**ANSWER:** Extraction has complied. Not required or applicable now. It is impossible to plan a final reclamation plan now. The owner of these lands in 20-30 years is unknown at this time. Further the planned use of these lands is not certain. Only conceptual plans consistent with final reclamations being completed now can be presented as Extraction has provided.

49. *“Ghost” in the oil and gas facilities, roads, walls, and disturbed areas so Broomfield is clear on what areas are being revegetated in relation to the disturbance.*

**ANSWER:** Extraction has complied. The Reclamation drawings demonstrate areas of reclamation. Please refer to the interim and final reclamation parts of the Form 2A packet.

50. *Road base in the final reclamation plan will need to be hauled off the site for all well pad locations.*

**ANSWER:** This is consistent with our final reclamation plans and practices.

51. *Who is the consultant advising Extraction on the interim and final reclamation plans?*

**ANSWER:** Most recently, Extraction has been consulting with the Butterfly Pavilion, among other experts, on final reclamation plans. Extraction will be able to provide additional information as the project progresses.

52. *The interim and final reclamation plans should also address how the irrigation ditch on the Davis Open Space, that is impacted by the Northwest Access Road, will be reclaimed. Currently, significant grading and some type of crossing are proposed although it is recommended that access occur on the north side of the Northwest Pads to minimize impacts to the irrigation ditch.*

**ANSWER:** We will not be disturbing the ditch. We defer to Broomfield as to any future plans CCOB has for that property.

53. *The Weed Section A should reference the Reclamation section or be a separate larger section in the overall report. More detail on what practices will be used to address weeds should be included. Minimizing pesticides and using mechanical and biological controls are encouraged. Goats are also something Broomfield uses and has found to be very effective for weed control.*

**ANSWER:** Thank you for this comment. The Weed Plan and Reclamation Plans have been submitted. However, we will take this additional feedback into consideration.

54. *Subsection 2.2 Item 5) indicates that in the spring and summer 2018, the area should be monitored for weed growth, and mowed as necessary. This monitoring and mowing should continue until release of reclamation is approved by COGCC and the City.*

**ANSWER:** Extraction can add in the Reclamation and Weed Plan that monitors for weed growth, and mowing will be done as necessary. We agree that this monitoring and mowing should continue until release of reclamation is approved by COGCC and the City.

***Section E – Noise Impact Mitigation Plan & Section M – Noise Modeling***

Comments on Application Section (E) Noise Impact Mitigation Plan & Section (M) Noise Modeling

55. *Ambient background noise measurements were made near the Livingston and Interchange Pads. Please provide ambient noise measurements for the Northwest or United pads.*

**ANSWER:** This has been provided and in the baseline noise studies that can be found in the January comprehensive drilling plan submittal.

56. *With regard to the Mitigated Sound Impact sections for both Livingston and Interchange pads, all that was presented was a brief introduction of the modeling and the model contour plots of the noise impacts during drilling and fracking. Please provide details of the assumptions or approach used in the modeling.*

**ANSWER:** Sound monitoring, modeling and the results of both monitoring and modeling efforts have been extensively researched and discussed during the Task Force process, and it was agreed that this requirement has been fully completed. We additionally agreed to several BMPs specific to noise that include sound walls, quiet fleets, electric rigs and other measures that will be used whether or not they will be needed to meet sound requirements. See BMPs #2, #18 and #31 of Exhibit B and Operator Agreement for additional detail.

57. *Both sections said that “All models are oriented in the northern direction”. What does it mean to be oriented in the northern direction? Did they mean that the plots had north at the top of the figure?*

**ANSWER:** Yes, this assumption is correct.

58. *Please provide detailed information with regard to the following:*

- *The noise model that was used.*

**ANSWER:** See response to #56.

- *The characteristics of the major noise sources being modeled (height, noise level).*

**ANSWER:** See report as it is stated. See also response to #56.

- *How many noise sources (i.e., fracking trucks) were modeled for each case.*

**ANSWER:** See Section 7(E) in the Noise section. See also response to #56.

- *The noise attenuation level of the 32' sound wall (estimated to be about 20 db(A) from the contour plots).*

**ANSWER:** See report as it is stated. See also response to #56. Any other noise attenuation measures that were assumed (e.g., sound insulated fracking trucks).

- *Any other noise attenuation measures that were assumed (e.g. sound insulated fracking trucks).*

**ANSWER:** See report as it is stated. See also response to #56. Any other noise attenuation measures that were assumed (e.g., sound insulated fracking trucks).

- *The direction of the access opening in the sound wall (to the SE at Livingston and toward the NW at Interchange?)*

**ANSWER:** See report as it is stated. See also response to #56 and we will We will comply with BMP 31, noted in Exhibit B of the Operator Agreement.

- *An interpretation of the modeling results and any conclusions that can be drawn from combining the noise modeling and monitoring information.*

**ANSWER:** Extraction has complied. See report as it is stated. The analysis is contained in the report.

- *Any report of results of modeling of C scale noise.*

**ANSWER:** Extraction has complied. See report as it is stated.

59. *In order for the City to understand and agree with the noise modeling results, a much more complete description of the noise modeling approach, results and conclusions needs to be included. The noise modeling section should be resubmitted with this information included. Please provide the following:*

**ANSWER:** Extraction has complied. During the Task Force, Noise modeling was addressed in detail, as was specifically outlined in our Operator Agreement.

- *The agreement requires sound walls if requested in writing. Please consider this correspondence as our official request for sound walls at all well sites.*

**ANSWER:** Sound walls of perimeter walls are part of our sound mitigation plan.

- *Why is access to the well pads from the south side of the pads rather than the north? Access from the south sides of the pads necessitates breaks in the sound wall on the side closest to residential uses.*

**ANSWER:** The access roads were approved by City Council Resolution No. 2017-186. Specifically, Exs. A., B. and D. note the access roads and entrances. However, there are ways to achieve entrance and egress points while still complying with BMP 31. Exhibit B of the Operator Agreement.

60. *Please include discussions related to the reductions in noise levels that can be achieved with sound walls and other mitigation measures.*

**ANSWER:** Extraction has complied. See report as it is stated. We believe we have planned and detailed what is among the most comprehensive noise mitigation strategies in industry history. Please additionally see answer #56.

61. *We noticed that a number of the sound level average tables include wind speed and precipitation data. Please describe if and how the precipitation data affects sound level.*

**ANSWER:** See report as it is stated. See also response to #56.

### **Section F – Lighting Plan**

62. *The Lighting best management practices identified in the agreement (see Page 16 of agreement, number 28): All bulbs must be fully shielded to prevent light emissions above a horizontal plane drawn from the bottom of the fixture. The proposed fixture can be mounted to allow light above the horizontal plane drawn from the bottom of the fixture. An alternative light fixture should be provided which is fully shielded and can only be mounted with light directed downward and in compliance with the above requirement.*

**ANSWER:** Extraction has complied. Section 1.0 of the Lighting Plan indicates that the lighting will be fully shielded.

63. *It is difficult to read the photometrics due to quality of the image. Please revise to ensure legibility in the document.*

**ANSWER:** Extraction has complied. A flash drive was provided to enable the City to be able to print and enlarge.

64. *Are there no other permanent lights installed during the production phase? The only lighting shown are the pole mounted lights and there are no other lights shown near or on equipment. Please include detail of all permanent lighting.*

**ANSWER:** Extraction has complied. Section 1.0 of the Lighting Plan specially address the production phase which indicates what lights will be present during production phase.

65. *There are no cut sheets or photometric provided for lighting installed during the drilling phase. Please provide more information regarding the intended lighting during this phase including cut sheets, lighting locations/heights, and photometric.*

**ANSWER:** Cut sheet and the specific location of lighting during drilling and completion phases are not required since they are not permanent and are adjusted throughout these phases. Soundwall and downcast lighting additionally accomplish lighting mitigation during temporary phases of the project.

### ***Section G – Traffic Comments***

66. *Please provide turning exhibits for the entrances and exit from Northwest Parkway ramps to/from Sheridan Parkway.*

**ANSWER:** Extraction has complied with all requirements of the Operator Agreement as they relate to entrances and exits. The CDP Section G, Appendix A addresses and illustrates proposed entrances and exits.

67. *List Broomfield Standards and Specifications as a reference for meeting compliance or non-compliance.*

**ANSWER:** The Broomfield standards and specifications BMC Section 14-04-010 is applicable to plugging and abandoning and use of right-of-way. There is no indication on a PPIP that new oil & gas development would require a PPIP. Extraction has complied and provided all the requisite information except for Sanitary and Sewer which would not apply.

68. *Applicant will be requested to submit an excess weight and size permit for those vehicles meeting this requirement prior to beginning work.*

**ANSWER:** These permits will be submitted prior to beginning work.

69. *Introduction page one under Transportation and Circulation (Traffic Plan), Part B should include a detail of traffic operations. Part G should read “Identify any traffic lanes and traffic control devices which would be subject to final approval of the City’s Traffic engineer”. Add Part I to include “A pre-construction operations meeting is to be held before each site is approved for work”.*

**ANSWER:** Extraction is meeting with the Broomfield Traffic Engineer to review the traffic plan.

70. *Understand that heavy truck traffic will not be operating during the peak hours of 7-9 a.m. and 3-6 p.m. This information needs to be carried throughout the report as a non-operating time for the heavy trucks.*

**ANSWER:** Extraction has complied. It is noted in the report.

71. *State that Extraction will be responsible for any repairs to the roadway system as part of their operations.*

**ANSWER:** This topic was addressed in the Operator Agreement, Section 15, Future Regulations. Additionally, the Arcadis Road study indicated that the condition of the road was sufficient for the traffic load.

72. *Need detail drawings of the Sheridan access locations to include curb and gutter, sidewalk, and landscaping modifications.*

**ANSWER:** Extraction has complied. Those documents were provided in the CDP.

73. *The striping plan for the proposed left turn lane on Sheridan Parkway needs to be modified to include a left turn arrow and MUTCD approved striping sizes. Redirect taper, deceleration lane distance, and lane taper need to comply with Broomfield Standards and Specifications.*

**ANSWER:** Extraction spent eight months engaging with the City and the Task Force regarding all aspects of Extraction's development plan including review of the traffic plan. The Traffic Plan conforms to the Broomfield Standards and Specification. However, Extraction is meeting with the Broomfield Traffic Engineer to review the traffic plan.

74. *Solar powered flashing beacons with "Trucks Turning" warning signage should be located on all public roadway locations (both directions) where ingress and egress is occurring.*

**ANSWER:** Thank you for this comment. Though not required by the Operator Agreement, Extraction will evaluate the possible use of solar powered flashing beacons in conjunction with "Trucks Turning" warning signage including at all public roadway locations (both directions) where ingress and egress is occurring.

75. *The radius on the southeast corner of Sheridan Parkway and 160th Avenue needs to be expanded to accommodate larger turning trucks.*

**ANSWER:** Extraction engaged with the Task Force and the City's Traffic Engineer for several months regarding all Transportation and Circulation requirements as contained in the City Land Use Code as may be reasonably required by the City's Traffic Engineer. However, Extraction is meeting with the Broomfield Traffic Engineer to review the traffic plan.

76. *The sight distance, because of the curve, at the exit for the Livingston well on Lowell Boulevard is not great. Suggest to lower the existing speed limit down to 30 mph approaching the access location.*

**ANSWER:** Extraction engaged with the Task Force and the City's Traffic Engineer for several months regarding all Transportation and Circulation requirements as contained in the City Land Use Code as may be reasonably required by the City's Traffic Engineer. Extraction will continue meeting with the Broomfield Traffic Engineer to review the traffic plan. Extraction does not have the authority to alter existing speed limits.

77. *Provide a cumulative summary of traffic impacts at any one location on Broomfield roadways. The area at Sheridan Parkway and the Northwest Parkway seems to be impacted with traffic by all of the well sites. A roadway map may be helpful to represent a cumulative summary of traffic volumes from all of the sites.*

**ANSWER:** Extraction engaged with the Task Force and the City's Traffic Engineer for several months regarding all Transportation and Circulation requirements as contained in the City Land Use Code as may be reasonably required by the City's Traffic Engineer.

78. *Provide an easy to follow summary table of traffic volumes at each site.*

**ANSWER:** Extraction engaged with the Task Force and the City's Traffic Engineer for several months regarding all Transportation and Circulation requirements as contained in the City Land Use Code as may be reasonably required by the City's Traffic Engineer. The City has summary tables of volumes at each site. Extraction will continue meeting with the Broomfield Traffic Engineer to review the traffic plan.

79. *Include a summary of the United Pad in the "summary of findings from supplemental traffic analysis evaluation of concerns."*

**ANSWER:** Thank you for this comment. Extraction will supplement the summary of findings at the United Pad site.

80. *The Livingston exit should be more perpendicular to existing Lowell Boulevard. This will require that the radius be improved/and or additional asphalt be added, so that vehicles are not turning into the opposing traffic lane.*

**ANSWER:** Thank you for this comment. Extraction is meeting with the Broomfield Traffic Engineer to review the traffic plan.

***Section H – List of Permits Needed and Variances***

81. *All flowline locations need to be recorded when their construction is complete (see Page 17 of the agreement BMP Item 33).*

**ANSWER:** The flowlines will be recorded subsequent to construction.

82. *Easements are needed for lay flat waterline.*

**ANSWER:** The City Council approved the easement agreement form in resolution 2017-186. The final executed Easement Grant is due from the City on March 1, 2018. The easement agreement provides that “all pipelines shall be below ground as set forth herein except for the water pipeline as shown on Exhibit A.”

83. *Easements for pipelines.*

**ANSWER:** The City Council approved the easement agreement form in resolution 2017-186. The final executed Easement Grant is due from the City on March 1, 2018.

84. *Easement Grant (Also provided as part of concurrent Public/Private Improvement Permit (PPIP) review) – Provide plan and profiles for the proposed pipeline(s) alignments in accordance with Section 160 of the Broomfield Standards and Specifications, including existing/proposed ground surface, utilities (oil, gas, produced water, domestic water/fire hydrants, reuse water, sanitary sewer, storm sewer, etc.), easements, depths, crossings and clearances. Include legal descriptions in addition to exhibits.*

**ANSWER:** Extraction has complied with this provision and has submitted plans.

85. *Grading and Over-Excavation Permit for site, permits can be found on the Broomfield website at the following link [Broomfield Engineering Permits](#). The following items are needed before approval of Permit.*

**ANSWER:** Extraction will request any necessary City permits. Requests of the permits would not delay approval of the CDP.

- *Approved grading plans completed in accordance with Section 160 of the Broomfield Standards and Specifications.*

**ANSWER:** Extraction intends to request any necessary City permits.

- *Submit the Wildlife and Environmental Clearance Letter from an environmental consultant for review/approval by the Broomfield Open Space and Trails Division, not more than 20 days prior to the anticipated start date of construction.*

**ANSWER:** Extraction intends to submit the Wildlife and Environmental Clearance Letter when due. This is not due until after the CDP is approved and is to be submitted 20 days before construction when obtaining the grading permit and is tied to the grading permit.

- *Stormwater Management Plan (SWMP) in accordance with Broomfield Stormwater Standards.*

**ANSWER:** The Field-wide SWMP permit authorization number is COR03MO13. Extraction is currently engaged in an annual update to this plan. It can be provided upon request once completed in coming weeks.

- *If Prairie Dogs are present on site submit a Prairie Dog Mitigation Plan and applicable permits for review/approval by the Broomfield Open Space & Trails Division Broomfield Prairie Dog Policy.*

**ANSWER:** Based on our site wildlife evaluation, there are no Prairie dogs at any of the locations. However, we are committed to appropriate mitigation plans if site conditions were to change.

- *Submit fully executed easements (if necessary) as shown on the approved construction plans.*

**ANSWER:** City approval anticipated and due on March 1, 2018.

- *Oil and Gas Wells Production Site Abandonment (if necessary) – Certification in accordance with Ordinance 1698.*

**ANSWER:** Legacy sites will be properly abandoned in accordance with COGCC, the Operator Agreement and local regulations.

86. *Public Private Improvement Permit (PPIP), permits can be found on the Broomfield website at the following link [Broomfield Engineering Permits](#). The following items are needed before approval of Permit.*

**ANSWER:** Extraction intends to request any necessary City permits.

- *Approved construction plans completed in accordance with Section 160 of the Broomfield Standards and Specifications (see Easement Grant comments above).*

**ANSWER:** Extraction intends to request any necessary City permits including the PPIP for the easement Grant. However, Extraction believes that Section 160

does not apply to the pad construction since this is not a real estate development. Extraction has submitted plans.

- *Submit a Final Pavement Design Report for City and County Engineer approval, following the installation of utilities and prior to the placement of subgrade, roadbase and asphalt (including curb and gutter).*

**ANSWER:** This was not in any of the agreements executed between the City and Extraction and therefore should not delay the approval of the CDP. However, we are currently meeting with the Traffic Engineer.

- *Have an approved designated truck route for construction traffic prior to the issuance of a grading or PPIP Permit.*

**ANSWER:** This is included in the Traffic Management Plan.

- *Have an approved Traffic Control Plan (TCP) for any work completed on Public ROW.*

**ANSWER:** Extraction has complied. Extraction has submitted a Traffic Management Plan. Extraction is currently working on plans with the City Engineer.

- *Submit a Building Permit for any retaining wall over 3' in height.*

**ANSWER:** Extraction intends to request any necessary City permits including the Building Permit as noted on the Permit Chart. Permit requests should not delay the approval of the CDP.

87. *The 20-day environmental clearance letter needs to be submitted for disturbance of any area--this includes the pipeline route as well as oil and gas pad sites, roads, etc.*

**ANSWER:** Extraction intends to submit the Wildlife and Environmental Clearance Letter when due. This is not due until after the CDP is approved and is to be submitted 20 days before construction when obtaining the grading permit and is tied to the grading permit.

88. *In the Proposed Potential Permit Requests Chart, the date the COGCC Form 2A applications will be submitted is January 15, 2017. Please indicate the correct year for the submittal date.*

**ANSWER:** Thank you for this comment. Extraction has noted the correction.

89. *The Proposed Potential Permit Requests Chart does not indicate any Air Pollution Emission Notice (APEN) applications. We understand an APEN is not a permit, but the City understands there may be some temporary or permanent equipment that will require*

*an APEN, so it would be useful to Broomfield to include these here if these applications will be filed.*

**ANSWER:** If an APEN is required, Extraction will provide to the City.

***Section I – Air Quality Impact Mitigation Plan***

The following lists areas where Extraction must provide more information in order to comply with the terms of Section 20 of the Agreement.

Odor controls. Section 20.A.10 and Section 48.

90. *The control of odors at nearby drilling sites in Erie has become a serious problem with nearby residents. Extraction has offered no details on what will be done if odors become a problem. All they say is: “Odors which could potentially emit from drilling operations will be proactively addressed through the use of engineering controls and by using additives when necessary.” This is quite vague. Further detail is needed to assure that odors will be actively addressed and will not become a neighborhood issue.*

*The City/Extraction agreement requires Extraction to apply year-round application of odor requirements pursuant to COGCC and CDPHE requirements. Section 20.A.10.*

*The COGCC requires operators to operate “in such a manner that odors and dust do not constitute a nuisance or hazard to public welfare.” COGCC R. 805.(a). The only statement in the plan related to odor control is that “odors which could potentially emit from drilling operations will be proactively addressed through the use of engineering controls and by using additives when necessary.” Air Quality Impact Mitigation Plan, p.5. More detail on odor controls is necessary. Please provide a written plan for how Extraction will comply with this requirement.*

**ANSWER:** Extraction is not required as per the Operator Agreement to have a separate Odor Plan and that cannot be required at this time. However, Extraction has a closed loop system planned in addition to a number of BMPs designed to mitigate odor. This appears to be an issue that would be addressed through the enforcement portion of our agreement.

91. *COGCC R. 805.b.(1) requires operators to be in compliance with CDPHE Reg. 2, 3 and 7, Section XVII.b.1(a-c) and Section XII. CDPHE Reg. 2 prohibits any person from causing or allowing any odorous air contaminant from any single source to result in detectable odors measured in excess of specified limits:*

**ANSWER:** Extraction is required to comply with all of the regulations cited here, and compliance with 5 CCR 1001-4 or CDPHE Reg. 2 as part of its air permits. Extraction will comply with the regulations.

- (1) *In residential or commercial areas: A violation occurs if odors are detected after the odorous air has been diluted with 7 or more volumes of odor free air.*

**ANSWER:** Extraction is required to comply with all of the regulations cited in this comment, including CDPHE Regulation 2 as part of its air permits. Extraction will comply.

- (2) *In other areas: A violation occurs if odors are detected after the odorous air has been diluted with 15 or more volumes of odor free air.*

**ANSWER:** Extraction is required to comply with all of the regulations cited in this comment, including CDPHE Regulation 2 as part of its air permits. Extraction will comply.

*The plan does not explain how Extraction will ensure that the facility comply with this requirement. Please provide in writing the steps Extraction will take to meet these odor control requirements.*

**ANSWER:** This appears to be a comment regarding compliance that would be addressed through enforcement by the City if compliance is not met. Extraction will comply with the Operator Agreement and existing state regulations. Section I) Paragraph 4.2 describes how odors will be addressed: odors “which could potentially emit from drilling operations will be proactively addressed through the use of engineering controls and by using additives when necessary.” BMP 23, 26(J), and 48 of Exhibit B of the Operator Agreement address odor. BMP 48 requires that Operator must use a filtration system or additives to the drilling and fracturing fluids to minimize odors. Operator is not permitted to mask odors from any oil and gas facility site by using masking fragrances.

92. *Section 3 of the Agreement also requires that Extraction use pipelines for produced water for flowback to the maximum extent feasible, transport fresh water by means other than trucks, and, if requested by the city, conduct a risk analysis to identify potential risks associated with pipelines and the measures implemented to mitigate such risks. Section 20 requires that pipelines be in place before production. Details on the use of pipelines for produced water and if the use of trucks is necessary, at what point, should be provided to the City.*

**ANSWER:** Extraction has complied. This is addressed in CDP.

93. *Extraction has agreed to install pipelines before production (PDF p. 48) and to use pipelines during production (pps. 48-49). It is not clear how Extraction plans to transport fresh water or whether it will use pipelines for produced water during flowback. Please provide written clarification on these issues.*

**ANSWER:** Extraction has complied. This is addressed in CDP.

Green completions. Section 21.

94. *Section 21.D. of the Agreement sets forth specific requirements for temporary flowback flaring and oxidizing equipment. Per the plan, Extraction notes compliance with 21.D.1. but it is not clear how the operator will comply with D.2-4. Please provide written details on how the Extraction will comply with these requirements.*

**ANSWER:** Extraction performs an engineering analysis for the temporary equipment and vapor collection system so that we have adequate management of fluid and vapor for what is expected to be temporarily produced during the flowback phase. As gas/oil/water takeaway capacity will be in place, the temporary nature of flowback is minimized so that once salable quality quantities of gas are made we route through permanent equipment.

95. *Baseline Survey (PDF p. 435)*

*The agreement requires Extraction to conduct pre-construction baseline air quality testing within 500 feet of the Well Sites (specifically the Livingston, NW A and B, United and Interchange A and B sites) by an approved consultant. The DP should note when it will conduct sampling at the other 3 future sites (United and Northwest A and B sites).*

**ANSWER:** The Updated Baseline Air Quality Monitoring Data Report (December 20, 2017 and included in the January 26, 2018 CDP) provides data for samples taken within 500 feet of the Livingston, Northwest A, Northwest B, United, Interchange A and Interchange B pads. The samples were taken by Air Resources Specialists, a consultant approved by the City and County Manager's office on November 15, 2017. As agreed to in the Operator Agreement, Extraction has met the air quality testing requirements.

96. *The City requests Extraction to provide written responses to the following questions regarding the baseline air quality testing:*

- *Were the samples collected in the prevailing downwind direction?*

**ANSWER:** The very nature of "baseline" sampling means there is no downwind or upwind direction as it is completed prior to any construction activities.

- *Please explain how SLR took into consideration emissions from the nearby NW Parkway? In other words, were the monitoring sites downwind or upwind from the parkway? The report notes that "the dominant local source of VOC emissions are likely to be related to transportation" but does not explicitly say whether the location of the monitoring was downwind from emissions from the NW Parkway.*

**ANSWER:** Extraction has complied. It was agreed to that Extraction had met this requirement. The Operator Agreement only required that the testing take place from a certain distance from the agreed Well Pad locations.

- *Extraction shall follow up with the City on sampling during drilling, fracking and production to determine if there are any impacts during these periods. Pollutants to be monitored during these phases should include BTEX as well as other hydrocarbons.*

**ANSWER:** This is described in the Operator Agreement that Extraction will allow access for the City to conduct follow up sampling at its discretion.

97. *The City requests a written response from Extraction on the following:*

*Table 2 in SLR's Emission Inventory and Impact Analysis includes emission factors used in modeling. For engines, Tier 1-4 emission factors are listed. The Air Quality Impact Mitigation Plan states Extraction will use Tier 2 engines. Please explain why Tier 1, 3 and 4 emission factors were used in the model, if they were.*

**ANSWER:** The Air Quality Mitigation Plan discusses Tier 2 specifically to hydraulic pumps in section 2.1.3 (Completions). This sentence should not be interpreted to relate to other engines or pumps used during the process. The emission inventory is more comprehensive and was used for model inputs.

98. *The plan has little detail regarding the control of fugitive dust and odors.*

*Fugitive dust will be controlled by watering with fresh water of construction areas and roads. In the middle of summer this may need to be done at least twice a day depending on weather conditions. Will Extraction have a contract watering truck do this dust suppression? They say they will only use fresh water but are they willing to use dust suppressants such as magnesium chloride or binding agents to help control fugitive dust emissions?*

**ANSWER:** CDP in Section I Paragraph 4.1 states that "Dust emissions will be minimized throughout all the phases of construction through operation such that there will be no given existing wind conditions. Extraction generally uses only fresh water for dust suppression by using contracted water trucks. Extraction will also consider the use of Magnesium Chloride, as appropriate, in compliance with the Operator Agreement. Extraction is planning on using Class 6 road base and recycled asphalt which by nature nearly eliminates fugitive dust.

99. *Describe how the air modeling is applicable even though the site locations changed after the modeling was completed.*

**ANSWER:** It was agreed to in BMP 4 of Exhibit B to the Operator Agreement and approved by City Council Resolutions 2017-186 that Extraction had complied. However, modeling always considers a most conservative-case scenario model, as the effort considers a facility with the greatest number of wells. This original modeling effort was intended to represent other proposed pads in a conservative manner, and the alternative locations do not alter the representation. The meteorological data that was used are “regional” and could be applied to a range of sites in the area. If the proposed development is similar and has the same or fewer wells, then the results could be extended to future characterizations.

100. *Section 2.1.2 states, “Drilling will begin in <<<2018>>> and each well will take from 4 to 10 days to drill.” Please list the date when drilling will begin to align with the overall project schedule.*

**ANSWER:** Until the CDP is approved, exact dates for certain tasks cannot be finalized. However, the Project Schedule that was included in the CDP addresses projected dates.

101. *Subsection 2.1.2 describes the use of electric powered drilling rigs and Subsection 2.1.4 describes electric vapor recovery units. Please describe Extraction’s plan if and when there is an electrical power outage.*

**ANSWER:** As described in the CDP, during drilling, backup generators are always available as power is needed to be continuous for safe drilling operations. During the production phase, permanent backup generators are not planned and the site is programmed to safely shut down if there is a power interruption.

102. *Please describe the specific equipment that will be used to combust gas with 98% destruction efficiency in Subsection 2.1.3.*

**ANSWER:** For Completions (Section 2.1.3), Extraction expects to use a Questor Q5000.

103. *In Subsection 4.3, Extraction states that specification sheets or details demonstrating combustor manufacturer emissions reductions will be available. Please include these specifications sheets and details as an attachment to this Section.*

**ANSWER:** This is not required by the Operator Agreement, however, Extraction provided detailed specification sheets for planned equipment to the Task Force and we could resubmit them if needed.

104. *Please include a discussion of how the combustion equipment will be maintained and calibrated, recordkeeping associated with this maintenance and calibration, and how all records will be made available for review by the City upon request.*

**ANSWER:** Please see Section 7 of the Air Quality Mitigation Plan for the reporting requirements agreed upon per the Operator Agreement.

105. *Will the emergency equipment described in Subsection 2.1.4 be stored permanently on site and if so, will this equipment require an Air Pollution Emission Notice (APEN)?*

**ANSWER:** Emergency combustion equipment (enclosed combustors) will be stored permanently on site. Emergency generators are not expected to be stored on site except during drilling. Extraction will calculate potential emissions for every source to determine if APENS are required, but at this time, we do not expect to file because we will not reach APEN thresholds.

106. *Is the emergency combustor described in Subsection 2.1.4 the emission control device shown in the illustrations of Section V – Visual Mitigation Plan?*

**ANSWER:** Yes, it is.

107. *Subsection 2.1.4 describes continuous monitoring systems that will send alarms based on conditional parameters. Please provide additional detail regarding who receives these alarms and what mechanisms will be in place to alert City staff and the North Metro Fire and Rescue if a potentially dangerous situation arises.*

**ANSWER:** The CDP states: “[t]his monitoring system sends alarms based on conditional parameters, which will allow operators to isolate the problem, redirect the process, or shut in if necessary.” These alarms will be evaluated by Extraction personnel and appropriate reporting procedures will be initiated (if required) on a situational basis.

108. *Subsection 4.2 states that potential odors from drilling operations will be addressed through engineering controls and the use of additives. Please provide details of the engineering controls and additives.*

**ANSWER:** In the CDP, Section (I), 4.1 regarding air mitigation addresses this. This was also addressed above in the Odor section Questions 90-91, including subparts.

109. *In Subsection 4.3, it states that any emergency flaring of flowback gas will be conducted with an enclosed flare. Please clarify if an enclosed flare is the same thing as a combustor and if not, describe how they are different and provide manufacturer specifications as an attachment to this Section.*

**ANSWER:** Extraction is not required to provide the manufacture specification as per the Operator Agreement. However it will be the same unit described above (Q5000), those specifications were provided previously to the Task Force.

110. *Subsection 4.4.1 describes the use of an enclosed combustor with 98% destruction efficiency for emergency flaring. Please provide additional detail of this equipment, whether this equipment will be permanently stored on site, how the 98% destruction efficiency will be demonstrated, and whether an APEN will be acquired.*

**ANSWER:** The Operator Agreement does not require details regarding equipment. However, it will be the same unit described above (Q5000), those specifications were provided previously to the Task Force.

111. *Subsection 4.4.2 states that staff will be required to report any incidental AVO potential leak detections. Please state who this will be reported to.*

**ANSWER:** An AVO leak detection is first remedied on site, and then recorded within an internal data tracking system that sends notice to the Company's Environmental staff on a daily basis for review or further actions if necessary.

112. *The recordkeeping described in Subsection 4.4.2 should include equipment calibration and maintenance. Please include a statement that all records will be made available for review by the City upon request.*

**ANSWER:** Extraction will comply with the required recordkeeping outlined in the Operator Agreement as well as with the requirements of the COGCC.

#### ***SECTION J – Emergency Response Preparedness Plan***

113. *This section is very generic and does not provide enough detail. Section 2 reads as an internal plan for Extraction. Please provide a coordinated response plan on how City and County of Broomfield (City), North Metro Fire Rescue District (NMF RD) and Extraction will coordinate response to one of the oil and gas sites.*

**ANSWER:** The initial TRP is meant to be generally broad to provide a discussion framework for addressing regulating agencies' comments. Extraction has been, and will continue to work with NMF RD and Broomfield OEM to address their needs for a response framework that includes tactics and response objectives unique to the project and their protocols. This plan will also broadly address Extraction's internal response framework and guidelines. These plans will address, and evolve with the temporary nature of drilling and completions activities. Extraction is also committed to continual engagement with NMF RD and OEM for ongoing site visits, training and drills to ensure preparedness of the first responders and Extraction personnel. A Unified Incident Command (NIMS) process will be used for any and all incidents regardless of size or complexity. Reporting and recovery operations will occur immediately and will involve all appropriate agencies, if required.

114. *Section 3 should include a general Concept of Operation and Roles and Responsibilities Section for all incidents at Extraction sites.*

**ANSWER:** See response to comment #113.

115. *Please identify each type of hazard for each location and specific responses by phases, including referencing the City and County's Emergency Operation Plan (EOP) and the COGCC Emergency Response Plan.*

**ANSWER:** See response to comment #113.

116. *Please provide specific Tactical Response Plans (TRP) and phasing (i.e., During Drilling, Completion/Fracking, Flowback and Production). This should include potential hazards by phase.*

**ANSWER:** See response to comment #113.

117. *Please provide all maps of sites, including the location of all equipment, isolation valves, pipelines and flowline "As Builts", with current and updated maps both hard copy and electronic provided for each phase. Also, please provide the GIS files that were used to create the 5 Maps that were included in the agreement between Broomfield and Extraction on OCT 24, 2017.*

**ANSWER:** We cannot provide "As-Builts" until the facilities are built. However, we can provide a GIS file.

118. *Please update Section 2.2 Spills to cover contact/coordination with the City and NMFRD. Extraction should indicate the point at which Extraction will contact City or COGCC and who should they contact at City? Please list the numbers at the City and NMFRD you will call for emergency is 911 and for Police Dispatch and NMFRD non-emergency at (303) 438-6400. If Adams County residents are impacted please list number to call for non-emergencies (303) 288-1535.*

**ANSWER:** Police Dispatch and NMFRD non-emergency number of (303) 438-6400 will be added. For Adams County residents, non-emergency number of (303) 288-1535 will also be added. Also, see response to comment #113, above.

119. *Please provide more written detail on how coordination with City/NMFRD will take place.*

**ANSWER:** See, response to comment #113.

120. *Please provide more written detail on the process of "Conduct Recovery Operations", including how the City Public Health Division and COGCC become involved.*

**ANSWER:** See response to comment #113.

121. *Please provide a plan in Section 2.3 Fires that includes coordination with the City and NMFRD.*

**ANSWER:** See response to comment #113.

122. *Please confirm that all well sites will have fire alarms and at what stage of operations those are installed.*

**ANSWER:** See response to comment #113.

123. *When is it not necessary to contact local fire department? How many staff is on site during different phases of drilling and production? Where is the map that shows the muster point.*

**ANSWER:** See response to comment #113.

124. *Section 3.1 Emergency Plan should include coordination with the City Emergency Operation Plan (EOP) and applicable Annexes including but not limited to, Hazmat and Alert and Warning. Security plans and procedures need to be included. It should include specifics on ICS structure and roles and responsibilities for involved agencies and Extraction.*

**ANSWER:** See response to comment #113.

125. *Please provide a resource mobilization/cache plan, which includes specialized equipment and resources such as foam caches and dispensing equipment.*

**ANSWER:** See response to comment #113.

126. *Please provide additional information on Site specific plans to include hydrant locations, flow runoff charts, evacuation and shelter in place zones recommendations.*

**ANSWER:** See response to comment #113.

127. *Please provide Extraction's written commitment to continue to attend emergency plan development meetings that have been scheduled and will be continued with all key stakeholders involved. Extraction should provide its written commitment to any additional planning requirements developed during these planning meetings that have all parties consent.*

**ANSWER:** See response to comment#113.

128. *The applicant needs to address the following in the Emergency Response Preparedness Plan:*

- *Site development project timeline that outlines the various development phases at each well site;*

**ANSWER:** See response to #113.

- *Need to reference to Alert and Warning Annex BF EOP:*

**ANSWER:** See response to #113.

- *Standard polygon templates for notification/evacuation at 1,000 foot increments;*

**ANSWER:** See response to #113.

- *Plans for custom polygons, should conditions warrant;*

**ANSWER:** See response to #113.

- *Identification of likely evacuation routes (situation dependent);*

**ANSWER:** See response#113.

- *On-site spill containment basins and capacities;*

**ANSWER:** See response #113.

- *Surrounding topography and likely routes for spill travel. Off-site spill mitigation plan;*

**ANSWER:** See response to comment #113.

- *References to plume modeling;*

**ANSWER:** See response to comment #113.

- *Air monitoring for gases of varying vapor density, including temperature effects. Volatile organic compound monitoring capabilities;*

**ANSWER:** See response to comment #113.

- *Identified hazards at each development phase (including chemicals). Material Safety Data Sheets;*

**ANSWER:** See response to comment #113.

- *Common addresses, access road locations and long/lat coordinates for each site and entrance;*

**ANSWER:** See response to comment #113.

- *Signage requirements including contact numbers;*

**ANSWER:** See response to comment #113.

- *Subcontractor information and contact numbers for each phase. Extraction supervisor contacts and phone numbers for each phase;*

**ANSWER:** See response to comment #113.

- *Radio frequency issues during fracking operations (inadvertent shape charge triggers);*

**ANSWER:** See response to comment #113.

- *References to standardized “hot zone” markings;*

**ANSWER:** See response to comment #113.

- *Station 66 contingency plans for events at the Northwest B-site (within 1,000 foot radius);*

**ANSWER:** See response to comment #113.

- *Identified staging and muster areas for each site, including alternate locations should conditions warrant;*

**ANSWER:** See response to comment #113.

- *Windssock requirement at each site;*

**ANSWER:** See response to comment #113.

- *Adequate water supply for each pad site;*

**ANSWER:** See response to comment #113.

- *Function and location of automatic site shutdown button(s);*

**ANSWER:** See response to comment #.

- *Equipment and supply cache information to include area foam caches, locations and contact information for specialized detection instruments and cameras, etc.;*

**ANSWER:** See response to comment #113.

- *Expanding incident algorithm describing agency involvement at each successive level; and*

**ANSWER:** See response to comment #113.

- *Extraction shall extend City water lines as needed for adequate water supply to all well sites.*

**ANSWER:** See response to comment #113.

*NOTE: These are preliminary potential plan additions, not a final, comprehensive list of requirements from the North Metro Fire and Rescue District.*

129. *The Incident Tactics are focused on the well facilities and associates personnel. Please describe the tactics that will be initiated to protect nearby residents, businesses, schools, etc.*

**ANSWER:** See response to comment #113.

130. *In Subsection 2.2, please provide discussion of initial and follow-up reporting to state and local agencies.*

**ANSWER:** See response to comment #113.

131. *Subsection 2.3 discusses small fires that may be extinguished by on-site personnel if deemed safe by managers. Please provide Extraction's written confirmation that it will report small fires that have been extinguished by on-site personnel should be reported to NMFRD in case they feel it is necessary to conduct a follow-up visit and to respond to questions from the public.*

**ANSWER:** See response to comment #113.

132. *The Tactical Response summary cards indicate that the first step is Implementation of the National Incident Management System Incident Command System. Please provide a written response as to whether this system be implemented for all levels of incidents? If not, please specify this and any alternate steps that may be taken for differing levels of incidents.*

**ANSWER:** See response to comment #113.

133. *The Tactical Response summary cards should also include the telephone number for the Colorado Environmental Release and Incident Reporting Line in the Notifications section for reporting incidents impacting water of the state and hazardous substances.*

**ANSWER:** See response to comment #113.

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134. *Extraction agrees to provide adequate firefighting foam and means to transport and apply such foam, as necessary, and subject to the terms of the Agreement.*

**ANSWER:** See response to comment #113.

135. *Extraction shall provide all necessary training and the content and procedures in the Emergency Plan shall be updated and exercised on a regular basis.*

**ANSWER:** See response to comment #113, Extraction has also provided introductory training to over 100 NMFDRD fire fighters, Broomfield OEM and will continue to train, as necessary.

136. *Extraction will provide other emergency supplies and equipment needed as requested by the City and NMFDRD.*

**ANSWER:** See response to comment #113.

137. *Extraction shall aid in plume modeling and evacuation/shelter in place determination, by providing a real time weather measurement through web-enabled weather station to be located at NMFDRD Station 66. Station should be capable of transmitting weather information such as temperature, humidity and wind speed and direction to incident commanders.*

**ANSWER:** See response to comment #113.

138. *Extraction shall provide plan for traffic routing around pad sites for potential incidents with off-site impacts. Plan should include procedures for restricting traffic on major arterials (Northwest Parkway and I-25), identification of traffic control points and evacuation route considerations.*

**ANSWER:** See response to comment #113.

139. *Extraction shall provide an Emergency Plan that includes contact numbers and procedures for restricting air-space above incidents during well-control incidents, including re-routing of traffic from Erie airport and restricting the use of private drones around pad sites.*

**ANSWER:** See response to comment #113.

140. *Extraction shall provide location(s) of “kick-outs” or other secondary openings and access points in sound barrier walls.*

**ANSWER:** See response to comment #113.

***Section K – FACILITY BASELINE SURVEYS***

Comments on Application Section (K) Facility Baseline Surveys

This section describes the ambient air baseline monitoring that was conducted at seven locations, Livingston, Northwest A, Northwest B, Nordstrom, Interchange A, Interchange B and United. The monitoring was conducted pursuant to requirements in the Operator Agreement. The monitoring consisted of using evacuated SUMA canisters to gather 24 hour air samples that were then analyzed for VOC compounds following the EPA TO-15 protocol.

The sampling that was reported was performed September 20 and 21, 2017, at three sites; Nordstrom, Northwest B and Interchange B. The report also mentions that a second sampling was done November 27 and 28, 2017, at the four other sites; Livingston, Northwest A, United and Interchange A. The report mentions that an update would be produced that includes the November data for the four additional sites.

141. *Since this report only discusses the September data at three sites it appears that the update with the November data has not been prepared and submitted. Please provide the November updated sampling results.*

**ANSWER:** The Updated Baseline Air Quality Monitoring Data report (December 20, 2017 and included in the January 26, 2018 CDP) provides data for samples taken within 500 feet of the Livingston, Northwest A, Northwest B, United, Interchange A and Interchange B pads. The samples were taken by Air Resources Specialists, a consultant approved by the City and County Manager's office on November 15, 2017.

142. *Some of the VOC detections (acetone and chlorinated solvents) do not seem typical of transportation related or oil and gas emissions. In the absence of industrial emission sources, please present some discussions on the potential source of these detections.*

**ANSWER:** We agree that chlorinated compounds as well as acetone are likely to have originated from other sources than from transportation. They could also be an artifact of the analytical process or sample contamination, however, sampling protocol helps protect against this. We are not able to speculate on other potential sources for analytes captured in the samples.

143. *Please discuss the selection process for the sampled locations and indicate the anticipated locations of future sampling during the development and operational phases.*

**ANSWER:** Samples were taken within 500 feet of the well sites in accordance with BMP 20.C.1. of Exhibit B of the Operator Agreement.

***SECTION L – Facility Emissions Inventories & Air Quality Impact Studies***

Comments on Application Section (L) Facility Emissions Inventories & Air Quality Impact Studies

144. *Since the modeling effort was performed at two sites that are no longer being considered for development by Extraction, and because the number of wells at the new proposed sites are different than what was modeled, please describe whether the modeling effort is still applicable and if not, will additional model simulations be performed.*

**ANSWER:** It was agreed to in the Operator Agreement and approved by City Council Resolution 2017-186 that Extraction had complied. However, modeling was always meant to be a most conservative-case model, as the effort was based on the facility with the most wells. This original modeling effort was intended to represent other proposed pads in a conservative manner, and the alternative locations does not alter this goal. The meteorological data that was used is considered “regional” and could apply to a range of sites in the area. If the proposed development is similar and has the same or fewer wells, then the results could be extended to future characterizations.

145. *Subsection 2.2.1 describes the use of an enclosed combustion device (ECD) to oxidize organic compounds produced from evaporative losses during drilling operations with a destruction efficiency of >99 percent. Please describe how the 99% destruction efficiency will be demonstrated, and whether an APEN will be acquired for this equipment.*

**ANSWER:** The Operator Agreement does not require details regarding this equipment. However, it will be the same unit described above (Q5000), those specifications were provided previously to the Task Force.

146. *Please discuss whether the modeling effort accounts for any emissions that might be associated with the use of emergency generators in situations when there may be an electrical outage during any stage of the operation. If this is already discussed in this section, please direct us to this discussion.*

**ANSWER:** This is broadly discussed in responses to comments #99 and #101. However by their very nature, emergency equipment is only intended to be used on rare and temporary occasions to ensure safe operations and was not included in the model. Additionally, as stated above, the emergency generators are only contemplated during the drilling phase of operations. As stated in the above responses, the model was intended to be very conservative.

147. *Figure 3 shows a water tank on site in the schematic of Fracking Completion Operations. It is the City’s understanding that water storage will not occur on the proposed sites, but rather will be transported from an offsite location. Please explain.*

**ANSWER:** Section 11 of the Operator Agreement titled “Approved Water Storage Site” addresses water storage and transport. It has been agreed to that Extraction will store water at the Weber H Unit 1 Well Pad site.

***Section N Hazardous Materials Management Plan and Waste Management Plan***

148. *Please include Extraction written commitment to provide copies of formal documentation of any unintended release to the City.*

**ANSWER:** BMP 52 of Exhibit B to the Operator Agreement provides that “Operator must notify the City of any spill of any material on permeable ground on the Well Sites that has a reportable spill quantity under any law. The Operator will also provide the City with a copy of any self-reporting submissions that Operator provides to the COGCC due to any spills at the Well Sites.” BMP 20.E of the Operator Agreement also contains provisions on the reporting of non-compliance with the air quality requirements of the Operator Agreement. Extraction intends to comply with the Operator Agreement.

149. *If drill cuttings are land applied in Broomfield, Extraction should agree in writing to allow the City access to each well site to review for the stormwater management plan.*

**ANSWER:** This is not required in the Operator Agreement; however, Extraction does not intend to “land apply” any drill cuttings in Broomfield. BMP 7 of Exhibit B to the Operator Agreement provides that the City Inspector has the ability to inspect the Well Sites as any time upon reasonable notice.

150. *Copies of the soil analysis for each site located in Broomfield, should be submitted to Broomfield.*

**ANSWER:** Extraction will comply with BMP provision 36 of the Operator Agreement.

151. *These plans focus entirely on waste and do not make any mention of chemicals that might be used during the various phases of the development. Please include discussions of potential chemicals to be used, details of these chemicals (e.g., CAS numbers, NFPA Codes, Hazard Codes), how the chemicals will be stored and handled, and any emergency planning that might be related to these chemicals. Safety Data Sheets should also be discussed and included where possible.*

**ANSWER:** BMP 13 of Exhibit B to the Operator Agreement has very specific requirements regarding the disclosure of chemicals to the City and an extensive list of prohibited chemicals. This section also provides that we must make CAS numbers and storage, containment and disposal methods available to the City prior to bringing chemicals onto the property. At this time, we are still evaluating these reservoirs and how best to optimize recovery through our industry-leading

completion techniques. We intend to comply with the provisions of the Operator Agreement.

152. *Section 2.1 discusses the injection of produced water with no commercial value. Please indicate that produced water will not be disposed in Broomfield per BMP 41 of the Agreement.*

**ANSWER:** Extraction will comply with BMP 41 of the Operator Agreement.

153. *Please include the following language from BMP 41 of the Agreement:*

- *All fluids shall be contained and there shall be no discharge of fluids;*

**ANSWER:** Extraction fully intends to comply with all provisions of its Operator Agreement.

- *Waste shall be stored in tanks, transported by tanker trucks and or pipelines, and disposed of at licensed disposal or recycling sites; and*

**ANSWER:** Extraction fully intends to comply with all provisions of its Operator Agreement.

- *No land treatment of oil impacted or contaminated drill cuttings are permitted.*

**ANSWER:** Extraction fully intends to comply with all provisions of our Operator Agreement.

154. *Please include a copy of the Spill Prevention, Control, and Countermeasures Plan with these sections.*

**ANSWER:** In Section 7(P) of the CDP, Extraction’s consultant cites “Extraction Oil & Gas, Inc. July 2016. Spill Prevention Control and Countermeasure Plan – North Metro Fire District Tank Batteries, Colorado.” Extraction will include.

155. *In the Land Application Waste Management Plan for Land Application of Water-Based Bentonitic Drill Cuttings, please indicate that the City will be notified in advance of any such applications and that these notifications will include the written authorization obtained from the landowner and the approval obtained from COGCC.*

**ANSWER:** Extraction will agree to notify the City in advance of submittal of any Land Application Waste Management Plan of Water-based Bentonitic Drill Cuttings and that these notifications will include the written authorization obtained from the landowner and the approval obtained from COGCC.

**SECTION P – Water Quality Plan**

156. *Please add a subsection (possibly Section 2.2.2) for notification to the City and County of Broomfield. This subsection should indicate that the City will be notified in advance of all sampling dates to allow the City personnel to attend the sampling events, and if desired, collect split samples from the locations for separate laboratory analysis.*

**ANSWER:** Extraction will comply with the provisions mutually agreed-upon in our Operator Agreement for notification and water quality testing guidelines.

157. *In Subsection 3.5, it states that additional water quality sampling and monitoring may be undertaken if issues or concerns are identified through landowner complaint or inquiry, or at the request of the COGCC. Please add that additional sampling and monitoring may also be undertaken at the request of the City.*

**ANSWER:** The Operator Agreement details the Water Quality Monitoring Plan in Section 26 of the BMPs and the CDP follows this specification.

158. *In Subsection 6.2, please add that GPS shapefiles will be made available to the City upon request.*

**ANSWER:** The Operator Agreement does not require shapefiles; however, the GPS location will be provided per BMP 26 of Exhibit B of the Operator Agreement.

159. *In Subsection 7.0, please add that the City will be notified in advance of the use of any analytical methods other than those specified in the Appendices.*

**ANSWER:** The Operator Agreement will be followed for testing guidelines.

160. *In Subsection 8.1, please add that all field quality control sample results will be made available to the City upon request.*

**ANSWER:** The Operator Agreement will be followed for testing guidelines.

161. *In Subsection 9.0, please add that all data quality reviews will be made available to the City upon request.*

**ANSWER:** The Operator Agreement will be followed for testing guidelines.

162. *Please provide the City as a point of contact for the Water Quality Monitoring Program.*

**ANSWER:** Extraction will include. Please provide the desired point of contact to Extraction.

163. *Attachments 6 & 7 are the COGCC parameters that Extraction is required to test and also there are Appendices of Local Sampling and Analysis Requirements. Please address the following comments in those sections:*

*163.1 Attachment 6 Groundwater Quality Analytical Parameter*

*Pages 589-591 list the parameters to be tested. This list does not include the polycyclic aromatic hydrocarbons as parameters tested in groundwater. Please include the polycyclic aromatic hydrocarbons as parameters tested in groundwater.*

**ANSWER:** Extraction will comply with the mutually agreed-upon provisions in the Operator Agreement that dictate testing protocols. However, we will explore and consider this request for additional test parameters.

*163.2 Attachment 7 Surface Water Quality Analytical Parameters*

*Pages 593-594 list the parameters to be tested in surface water. Please include the polycyclic aromatic hydrocarbons.*

**ANSWER:** Extraction will comply with the mutually agreed-upon provisions in the Operator Agreement that dictate testing protocols. However, we will explore and consider this request for additional test parameters.

- 163.3 Please test for aromatic hydrocarbons in surface water and in groundwater. These aromatic hydrocarbons are volatile and if they are present those would be in the groundwater with maybe only traces in surface water. Most would volatilize when they hit the atmosphere.*

**ANSWER:** Extraction will comply with the mutually agreed-upon provisions in the Operator Agreement that dictate testing protocols. However, we will explore and consider this request for additional test parameters.

*163.4 Appendices of Local Sampling and Analysis Requirements*

**ANSWER:** Extraction will comply with the mutually agreed-upon provisions in the Operator Agreement that dictate testing protocols. However, we will explore and consider this request for additional test parameters.

*Pages 600-602 list the additional parameter please add the polycyclic aromatic hydrocarbons, Acrylamide and Naphthalene to groundwater testing in Attachment 6 for the reasons discussed above.*

**ANSWER:** Extraction will comply with the mutually agreed-upon provisions in the Operator Agreement that dictate testing protocols. However, we will explore and consider this request for additional test parameters.

163.5 *What analytical method will be used to sample for Hydrogen Sulfide?*

**ANSWER:** Analytical method is ASTM D5504, and will be added to the SAP.

**SECTION R – Risk Management Plan**

164. *This plan mostly discusses the approach to risk management and provides a broad overview. Please identify and discuss the specific risks that Extraction anticipates could affect the community and the environment. Specifically, please address the risk of fire and explosion at these specific sites and a plan to minimize those risks in light of the December 22, 2017, explosion at Extraction’s facility in Windsor, Colorado.*

**ANSWER:** Risks are assessed on a case-by-case basis. The Risk Management Plan is intended to serve as a broad overview of the protocol.

165. *Subsection 2.1 refers to the Broomfield Operations Team and Broomfield Project Manager. Please provide language to clarify whether this team and manager consists entirely of Extraction staff and their contractors. Alternatively the team name can be modified for clarification.*

**ANSWER:** At this time, the specific names cannot be provided as the Operations Team and the Broomfield Project teams may change slightly. As permits are approved and we move closer to operations phases, Extraction will provide additional detail as to the team members.

166. *Subsection 2.3 or other subsections should include risk severity and frequency discussions and how Extraction will respond to uncontrolled risks, like the uncontrolled release of fluids.*

**ANSWER:** Risks assessed on a case-by-case basis at the time.

167. *The Health and Safety bullet item in Subsection 2.3 talks about the ties between risk management and the Emergency/Tactical Response Plan. The Emergency/Tactical Response should describe and discuss and/or be referenced in Subsection 2.4 Risk Response.*

**ANSWER:** This will be addressed in the final TRP. Please additionally see response to comment #113.

168. *Please add clarifying discussions of how the Project Impacts relate to the Broomfield community.*

**ANSWER:** Extraction will continue to engage with NMFRD with regard to the TRP as well as collaborative effort with Broomfield to mitigate and minimize project impacts. Exhibit B to the Operator Agreement specifically addresses mitigation and minimization of project impacts.

169. *Broomfield's Oil and Gas Chapter of the Comprehensive Plan identifies all of the potential risks that the committee felt were associated with this project. Please incorporate this chapter into the Risk Management Plan.*

**ANSWER:** These are addressed in the emergency response part of the CDP regarding spills over one gallon, fires, explosions, blowouts and injuries.

## **SECTION T-WETLANDS PROTECTION PLAN AND ENVIRONMENTAL SITE REVIEW**

### **Wetlands:**

170. *The Interchange Pad aerial photos should show the open space boundary for the land proposed to be dedicated to Broomfield.*

**ANSWER:** The aerial photos will include the boundaries of the proposed land to be conveyed to the City once the land is conveyed.

171. *The Interchange B Pad Wetland Letter shows that the pad site is just a few feet out of the 100-year floodplain. A setback from the 100-year floodplain is needed to protect this area and the wetlands to the south on future Broomfield Open Space. What mitigation is proposed to protect Broomfield's future open space?*

**ANSWER:** Extraction has complied. Extraction consulted the City for many months regarding the sites. These sites have been approved by City Council in Resolution 2017-186. The proposed mitigation has been approved in the Operator Agreement approved by resolution.

172. *The existing well on the Interchange site encroaches into the 100-year floodplain. This situation does not reflect site planning that demonstrates best practices for the protection of the 100-year floodplain. Identify when this well will be removed and Extraction is strongly encouraged to remove this well so that any impacts to the 100-year floodplain and adjacent wetlands can be avoided. The Interchange Pad B needs to be pulled to the north to protect the 100-year floodplain and wetlands to the south.*

**ANSWER:** Extraction consulted the City for many months regarding the sites. All sites have been approved by City Council in Resolution 2017-186. Additionally, the existing well on the Interchange site will be plugged and abandoned in accordance with the provisions of the Operator Agreement.

173. *The Northwest A Pad Wetland Letter needs to address the Northwest Access Roads impacts on any wetlands because this road is also crossing an irrigation ditch on the Davis Open Space. Also, the letter should confirm that the trees will remain and will be protected during all phases on the oil and gas operations. These trees provide raptor perch areas.*

**ANSWER:** Extraction will provide the 20 day letter. The location of the Northwest Access Roads were approved by City Council Resolution 2017-186.

***Environmental Site Review:***

174. *Broomfield's 20-day letter will be required for all well sites and must be submitted no later than 20 days before work begins on these well pad sites. The purpose of the letter is to confirm that there are no threatened and endangered species (flora and fauna), prairie dogs, tree or ground nesting birds, wetlands, floodplain, and shrubs proposed for removal or other wildlife or environmental concerns on the site. The 20-day letter shall cover the project area that includes the access road, well pad site, construction staging areas, pipeline routes, or other project areas necessary for the project.*

**ANSWER:** Extraction was not required as per the Operator Agreement to submit this 20-day letter. However, Extraction will provide the 20-day letter which will address these factors in project area that includes the access road, well pad site, construction staging areas, pipeline routes, or other project areas necessary for the project. This is not yet due and is somewhat tied to the Grading Permit. Submittal of the letter should not delay the City's approval of the CDP.

175. *Although there are no nest sites on the actual pad sites, there are numerous raptor nests surrounding the sites. See Northwest B Pad Figure 1. The biologist needs to discuss the appropriate buffers per state and federal regulations if these nests are active during the time period that Extraction desires to grade and construct. The Northwest, United and Interchange pads are of particular concern. Nesting has also been seen as early as January so the February date is too late and should be changed to January.*

**ANSWER:** Extraction will comply with the provisions in our mutually agreed-upon Operator Agreement and all regulations governing wildlife protection.

176. *Plan the construction to avoid the sensitive nesting time periods for raptors, ground nesting birds and other wildlife. Extraction should commit to this best management practice.*

**ANSWER:** Extraction will comply with the provisions in our mutually agreed-upon Operator Agreement and all regulations governing wildlife protection.

177. *Livingston Site: Although at this time, no prairie dogs were found on the immediate well pad site, there have been and may even be some prairie dogs on the Hoopes property in the vicinity of the Livingston Pad. See note above about need for the 20-day letter.*

**ANSWER:** There are no prairie dogs at this time. If any are found, Extraction will follow the Broomfield rules and regulations.

178. *Northwest A and B Pad: There are several large trees on this property that are very close to the area that will be used for this well pad. The report should identify what permanent fencing will be placed around these trees to protect them from construction staging and the numerous trucks that will be accessing this site. A nest platform was placed in one of the trees several years ago. Figure 1 in the United Pad Letter also notes that there is Potential Burrowing Owl Habitat (PBUOW) on the southern portion of the Nordstrom Open Space adjacent to the existing well. The PBUOW should be addressed with the Northwest Access Road as this construction could impact Burrowing Owls if not completed outside the burrowing owl season. Note as of January 6, a Burrowing Owl has been seen in an adjacent development project. Any potential vegetation in the irrigation ditch should also be addressed in this letter. See note above about need for the 20-day letter.*

**ANSWER:** Thank you for this comment. That land is owned by Broomfield and currently being utilized as a farm lease. Extraction will address as needed. Extraction's construction and transportation operations will not impact the trees identified in the comment above.

179. *United Pad: The letter notes adjacent nest sites and the need for a ground nesting study if work begins during the protected times. Figure 1 in the United Pad Letter also notes that there is PBUOW on the southern portion of the Nordstrom Open Space adjacent to the existing well. The PBUOW should be addressed with the Northwest Access Road as this construction could impact Burrowing Owls if not completed outside the burrowing owl season. Note as of January 6, a Burrowing Owl has been seen in an adjacent development project. See note above about need for the 20-day letter.*

**ANSWER:** Thank you for this comment. That land is owned by Broomfield and currently being utilized as a farm lease. Extraction will address as needed.

180. *Interchange A and B: See the comments above under wetlands related to the Interchange B Pad. The letter needs to address these concerns. Also, it appears that there is a nest site within the farm building complex that Extraction proposes to remove in the next month or so. The nest should be checked by the biologist before work commences on the building removal/site clean-up to make sure that the nest is not active. The letters for both pad sites should show the boundary of the proposed Broomfield Open Space dedication. See note above about need for the 20-day letter.*

**ANSWER:** Thank you for this comment. That land is owned by Extraction and was being utilized as a farm lease. Extraction will address as needed.

***Huron Open Space Dedication on the Interchange Property-Summary report and plan needed:***

181. *The proposed open space dedication also needs a wetlands letter and environment assessment letter. It appears that the 100-year floodplain, wetlands, and a nest site are*

*on this site. Recently, Broomfield sent Extraction a list of comments and requirements in an email. The proposed dedicated land needs to have its own report that addresses the list of topics and concern requested by the City and explanation of what area is proposed to be included in the minor subdivision plat needs to be submitted. The report should also include a fencing plan to separate the Interchange pads from this site as well as the existing well that Broomfield would like to see removed as soon as possible and gates to secure the site. The fencing and gates are needed to address safety concerns with the nearby wells and unauthorized access into the site.*

**ANSWER:** Fencing was not required at all sites. If Broomfield desires additional fencing, Extraction will evaluate and consider this request, as it is not a requirement of our mutually agreed upon Operator Agreement.

### ***SECTION U – ELECTRIFICATION PLAN***

#### **Comments on Application Section (U) Electrification Plan**

182. *United Power will supply power to Extraction at a metering point near the access road. All electrical equipment beyond that point will be owned by and be the responsibility of Extraction. Please indicate all wiring on the pad site should be underground or if this is not possible, where wiring will be above ground, which should be the one exception the power lines which supply the drilling rig which needs to move from well to well for the drilling activities on the pad.*

**ANSWER:** We are working with United Power and will share additional details with regard to planning and installation of electrical infrastructure as those plans are specified further. The purpose of these discussions is to ensure that all power is supplied with consistency and in harmony with the surrounding area.

183. *The design of the electric distribution system to deliver this power to each of the well pads is the responsibility of United Power. They are planning to use an existing primary distribution feeder from the Green Substation located at 156th and Washington Street to supply the Interchange and Northwest pads. This feeder already serves existing residential customers along Huron Street. Because a varying 4 MW load on a 13.5 kV feeder line may cause power quality problems (dimming or flickering lights) for these residential customers, please provide in writing that separate feeders shall be used for the Interchange and Northwest pads.*

**ANSWER:** We are working with United Power and will share additional details with regard to planning and installation of electrical infrastructure as those plans are specified further. The purpose of these discussions is to ensure that all power is supplied with consistency and in harmony with the surrounding area.

184. *United Power notes that running more than one drilling rig at a time on a single feeder is not possible. Therefore depending on drilling schedules, Extraction agrees to provide for additional feeders from both Green and Parkway to serve these loads.*

**ANSWER:** We are working with United Power and will share additional details with regard to planning and installation of electrical infrastructure as those plans are specified further. The purpose of these discussions is to ensure that all power is supplied with consistency and in harmony with the surrounding area.

185. *The electrification plan is vague on the use of underground distribution lines but Extraction should ensure that United Power should bury as many of the feeders as possible, especially those that will be permanent. A possible exception is where they will need a temporary feeder to supply a pad only drilling. Once the drilling is finished, the temporary overhead feeder shall be removed.*

**ANSWER:** We are working with United Power and will share additional details with regard to planning and installation of electrical infrastructure as those plans are specified further. The purpose of these discussions is to ensure that all power is supplied with consistency and in harmony with the surrounding area.

186. *In Subsection 1.0, it is indicated near the end of this subsection that easements will be obtained and recorded by Extraction. Please indicate who these easements will be recorded with.*

**ANSWER:** The Plan will be updated to note that the easements will be recorded with Broomfield.

187. *Subsection 3.0 has a Utility Disclaimer stating that United Power Electric Cooperative has performed only preliminary engineering evaluations. Please provide the completed evaluations when they are available.*

**ANSWER:** Extraction will provide when the engineering evaluations are complete.

188. *It appears that a portion of the text is missing from Subsection 4.2, under the Distribution Power Transformer topic. Please add this text.*

**ANSWER:** Extraction will add the text that is missing.

### ***Section V – Visual Mitigation Plan***

189. *Please indicate the materials that will be used for the 32-foot high wall and add to the project GANTT chart the timeline for when the walls will be in place at each pad?*

**ANSWER:** Sound wall material is a specially-engineered polymer that varies slightly from vendor to vendor. It is constructed just prior to the drilling phase

and is removed soon after the completion phase while interim reclamation is being conducted.

190. *Please identify height of equipment shown above the height of the wall.*

**ANSWER:** The drilling rig and supporting equipment and some of the completion equipment (workover rig, cranes, etc.) used for hydraulic fracturing will be taller than the wall.

191. *Please provide the colors proposed for walls.*

**ANSWER:** The wall fabric is an earthy sand color, commonly known as desert tan.

192. *The plans in the Visual Mitigation Plan are not legible. The text appears unclear. Please provide a legible version for review by the City.*

**ANSWER:** Extraction has updated the plan with a higher-resolution copy in the January CDP.

193. *Landscaping along Sheridan Parkway would improve the visual mitigation since the well pad sits at a lower elevation than the road. Please provide a landscaping plan that includes Evergreen and deciduous trees just outside of the right-of-way and includes irrigation and maintenance plans.*

**ANSWER:** The requested landscaping with evergreen and deciduous trees is not compatible with the Open Space designation. It was agreed to have landscaping that was consistent with what is currently in existence and would not compete with the City's municipal and domestic use of water resources. The Operator Agreement does not contemplate the use of irrigation as agreed to by both parties, in order to be consistent with the current native vegetation.

194. *Please provide the visual mitigation plan proposed around the pig launcher station at Huron.*

**ANSWER:** Extraction is willing to discuss a plan with Broomfield after completion phase of the wells.

195. *View analysis drawings should be provided to show residents to the south of the Northwest Pads A and B what they will be seeing from several vantage points.*

**ANSWER:** This analysis was included in the January 26, 2018 CDP submission.

196. *Please clarify whether the Emissions Control Device shown in the illustrations will be on site permanently or only during the emergency and maintenance operations.*

**ANSWER:** The Emissions Control Device will be permanent equipment on the site.

197. *Please explain how the of the berms at each well site were determined for the visual mitigation plans. For example berm heights at Livingston and Interchange pads differ. Describe how the height of berming is being determined.*

**ANSWER:** Berm height is based on needed mitigation at each site and provides visual mitigation for most of the production equipment. Additionally, the objective was to minimize the area of disturbance of the pad during the remainder of the production phase.

198. *Subsection 2.0 indicates that a third party weed control service will be contracted to prevent and control the reoccurrence of noxious or excessive weed growth. Please clarify that the contracted weed control service will have an appropriate State applicator's license.*

**ANSWER:** The contracted weed control service will have the appropriate State applicator's license.

#### **FORMS 2 & 2A – INTERCHANGE AND LIVINGSTON PADS**

Comments on COGCC Forms 2 and 2A. Interchange and Livingston Pads.

199. *Grading and stormwater control plan drawings for Interchange and Livingston Pads were included in the application. Please include the grading and stormwater for the United or Northwest pads.*

**ANSWER:** The plans were included in the January 26, 2018 CDP submission.

200. *Exhibit Q drawing for both Interchange and Livingston Pads says in the comment block for name and location of receiving waters that the “Stormwater runoff travels easterly to Big Dry Creek which flows to the south and discharges to Stanley Lake”. This may be partially true for the Interchange Pad since the land slopes to the southeast generally in the direction of Big Dry Creek. At Livingston, the land slopes to the west and north generally toward Rock Creek and Coal Creek. In no place in the area does Big Dry Creek flow to the south and discharge to Stanley Lake. The flow is the opposite from Stanley Lake to Big Dry Creek on to the northeast to the South Platte River. This information should be addressed and documented in Exhibit Q.*

**ANSWER:** Thank you for this comment, Extraction will evaluate.

201. *The Livingston pad drawing makes no mention of the stormwater flow to the west, and south would be toward the proposed Broomfield Reservoir. A low swale to the west of the pad will likely intercept the overland flow and direct it to the northwest toward Rock and Coal Creeks. In addition Exhibit Q for Livingston shows a northwesterly flowing*

*48" pipe at the base of the slope from the pad that will direct the flow to a riprap French drain and then into the existing swale that flows northwestward. This information should be addressed and documented in Livingston pad drawing.*

**ANSWER:** Thank you for this comment, Extraction will evaluate.

202. *Extraction should indicate in writing that the approved Development Plan and the Agreement BMPs shall be made a part of all Form 2 and Form 2As.*

**ANSWER:** Extraction will comply. The COGCC Form 2A's and 2's reference Extraction and the City's Operator Agreement. All BMPs are incorporated within. Also, the Operator Agreement stated that the BMPs would be made a part of the COGCC filings.

### ***PIPELINE EASEMENTS***

#### ***Easement Grant that Includes Anthem 24 Open Space, Harmer, Wildgrass, Nordstrom and Davis Open Space:***

203. *Paragraph 1 should reference liquids, etc. to flow through the pipeline that comply with our Operator Agreement requirements. This section is very wide-open and the Oil and Gas Committee had recommendations on allowable fracking chemicals, etc.*

**ANSWER:** Extraction will comply with the Operator Agreement and all provisions governing acceptable completions ingredients as outlined in BMP 13 of Exhibit B of the Operator Agreement.

204. *Paragraph 2 allows for a 100-foot wide construction easement. This seems excessive and should be reduced as much as possible in width to limit impacts to the site.*

**ANSWER:** The easement forms were approved by City Council Resolution 2017-186 and this distance is consistent with industry standards.

205. *Paragraph 4 needs a statement that for open space properties, the Open Space and Trails Department and Parks Maintenance Division will have the right to review and require a revegetation plan subject to staff approval.*

*Provide the total square footage for each open space site that is impacted using the final construction easement.*

**ANSWER:** Extraction plans to consult with a number of stakeholders, including the City and the Butterfly Pavilion as it relates to interim and final reclamation of these sites.

206. *The Environmental Resources Report is needed for each property in the location where the construction work will occur. T and E species, prairie dogs, nesting and ground*

*nesting birds, wetlands, tree removal, and other wildlife need to be addressed by a wildlife biologist for the pipeline corridor.*

**ANSWER:** In addition to some of the above cited aspects covered in our Wetlands Protection Plan (Section T), and the Environmental Review and Site Inspection that we have delivered to the City, we will additionally be submitting a 20-day Wildlife and Environmental Clearance letter prepared by an environmental consultant for review by the Broomfield Open Space and Trails Division for the well sites located on open space to be submitted within 20 days prior to the anticipated start date of construction.

207. *The DP and the pipeline easements need to provide for concrete trails over the easements.*

**ANSWER:** Extraction will follow all appropriate local, state and federal regulations as they relate to easements.

208. *Legal descriptions for the easements are needed on each property. These legal descriptions need to be checked by the Broomfield GIS Department.*

**ANSWER:** Extraction has provided legal descriptions.

### ***Pipelines***

The following issues should be addressed with regard to pipelines:

209. *Please indicate where the easement is on the west side of Huron between realignment (Inca St. alignment) and W. 160th, and whether it is on McWhinney property.*

**ANSWER:** It is listed on the plans and CDP. This is also included in the shape file provided to CCOB.

210. *Huron Street from W. 160th to Lowell Lane:*

**ANSWER:** It is listed on the plans and CDP. This is also included in the shape file provided to CCOB.

- *In prior discussions, it was agreed pipelines would be deeper in this section to allow water and sewer lines to be installed above the pipeline (crossing to IKEA site). Extraction should state in writing that these pipelines will be lowered as necessary to accommodate City and IKEA plans.*

**ANSWER:** The Easement Agreement as approved by City Council Resolution 2017-186 provides for the additional depth.

- *Extraction shall agree in writing in the DP that the pipeline will be placed lower at locations where there will be drainage and pedestrian crossings below grade, as determined by the City. Locations known are south of Lowell Lane and south of SH 7. Box culverts are needed in this area and future construction could disturb pipelines (possible necessitate moving of pipeline) if it is not deep enough.*

**ANSWER:** The Easement Agreement as approved by City Council Resolution 2017-186 provides for the additional depth.

- *Extraction shall indicate in writing that it will coordinate pipeline installation with known utility locations planned for IKEA and other development north of State Highway 7.*

**ANSWER:** Extraction will follow up with the appropriate utilities for pipeline installments.

211. *Where does pipeline go north of Lowell Lane? Is it using Lowell Lane ROW? If so, include in exhibit and include legal description.*

**ANSWER:** It is listed on the plans and CDP. This is also included in the shape file provided to CCOB.

212. *Please provide a cross section of Huron showing depths and relationship of easement to edges of ROW and existing water/sewer/storm lines? Two sections needed: north and south of SH7.*

**ANSWER:** The cross section of Huron is listed on the plans submitted with the CDP. This is also included in the shape file provided to the City.

213. *Please confirm in writing that at Pecos Street the installation depth of the pipeline will need to be coordinated with the City to ensure the pipeline will allow for the sewer force main to come north/south through the Pecos Street right of way.*

**ANSWER:** Extraction will coordinate with the City.

***Easement Grant that Includes Hoopes Open Lands:***

214. *Paragraph 1 should reference liquids, etc., to flow through the pipeline that comply with our Operator Agreement requirements. This section is very wide-open and the Oil and Gas Committee had recommendations on allowable fracking chemicals, etc.*

**ANSWER:** See answer in prior pipeline easement section included in responses to comment nos. 209-213.

215. *Paragraph 2 allows for a 100-foot wide construction easement. This seems excessive and should be reduced as much as possible in width to limit impacts to the site.*

**ANSWER:** See answer in prior pipeline easement section.

216. *Paragraph 4 needs a statement that for open space properties, the Open Space and Trails Department and Parks Maintenance Division will have the right to review and require a revegetation plan subject to staff approval.*

**ANSWER:** See answer in prior pipeline easement section.

217. *The Environmental Resources Report is needed for each property in the location where the construction work will occur. T and E species, prairie dogs, nesting and ground nesting birds, wetlands, tree removal, and other wildlife need to be addressed by a wildlife biologist for the pipeline corridor.*

**ANSWER:** See answer in prior pipeline easement section.

218. *The agreement needs to allow for concrete trails over the easements.*

**ANSWER:** See answer in prior pipeline easement section.

219. *Legal descriptions for the easements are needed on each property. These descriptions need to be checked by the Broomfield GIS department.*

**ANSWER:** See answer in prior pipeline easement section.

220. *All Easements shall indicate that the Grantor reserves the right to access the Easement Areas as necessary to install, maintain, or repair City utilities on or adjacent to the Easement Areas. For Easement Agreements that involve City property on which the City owns or plans to construct reservoirs, the Grantee shall agree to use the Easement in such a manner that does not interfere with the City's design and use of the City's property for a reservoir.*

**ANSWER:** Extraction will comply the Easement Agreement that was approved by City Council Resolution 2017-186. The width is 100 feet because in certain places the excavation will be to a depth of 7 feet instead of 4 feet.

### **Extraction's Response to Citizen Comments**

The citizen comments presented can be grouped in several categories listed below. Many of these comments were also presented by the City and already addressed by Extraction in its response to comments to the City above. To follow are the categories and Extraction's responses.

1. **Form 2A Filing:** The citizens presented concerns regarding Extraction filing a single COGCC Form 2A instead of two for the Interchange A & B pad. The citizen impression was that the single COGCC Form 2A may preclude citizens from commenting.

**ANSWER:** Citizens will still have the opportunity to present written comment on the pad regardless of whether one Form 2A was filed or two.

2. **Alternative Site Analysis:** Adams County as well as citizens presented comments as to the alternative site analysis and the location of the pads being planned in close proximity to homes.

**ANSWER:** The alternative site analysis was conducted by the City with the application of a matrix developed by the Task Force. Following the Task Force presenting recommendations, Extraction and the City negotiated the well site locations and Extraction made numerous changes to its development plan at the City's request. Extraction's well sites were approved as part of City Council Resolution 2017-186.

3. **Reclamation:** Adams County presented comment as to multiple parts affecting reclamation including why a final plan of reclamation could not be presented now and the fact that by increasing the number of pads from four, Extraction was increasing the footprint of the overall disturbance. Adams County further suggested that a large pad would decrease the overall footprint.

**ANSWER:** The City's Task Force met for many months and presented its recommendations. Extraction's well sites were approved as part of City Council Resolution 2017-186 approving the Operator Agreement following months of analysis by the Task Force and hours of deliberation by the City Council following public comment.

4. **Traffic and Haul Routes:** Citizens presented concerns as to the increase of well sites from four presenting increased traffic. The comments suggested that multiple pads would create a greater impact on traffic and on traffic associated with any emergency evacuation.

**ANSWER:** The City's Traffic Engineer engaged in discussions with the Task Force regarding traffic and access to the well sites. A traffic plan has been

presented in the CDP. The road access to the pads was approved as part City Council Resolution 2017-186 where the well sites and access were approved.

5. **Engagement:** Citizens presented a comment regarding a concern of lack of engagement regarding siting.

**ANSWER:** Extraction has held several meetings providing an opportunity for Adams County residents to engage in discussions about the project. The City Council also accepted comments from Adams County residents and officials.

6. **Windsor Fire:** Citizen comments included concern of the fire that occurred in Windsor on December 22, 2017. Citizens questioned whether the Emergency or Tactical Response Plans submitted in the CDP on December 15, 2017 anticipated fires in extreme cold weather and mitigation of such events. As well, there is concern regarding what type of equipment was used on the location where the fire occurred. Comments were also presented as to how Adams County residents would be notified in the event of an emergency.

**ANSWER:** Extraction has presented a Tactical Response Plan anticipating many different scenarios. Extraction is also engaged in ongoing planning with the NMFRD and OEM and is working on a Fire Plan. Please see response to comment #113.

7. **Air-Quality Mitigation:** Citizens presented concerns regarding fugitive emissions and dust pollution created on the access roads. There were also comments presented on whether the operations would increase the likelihood of development cancer from the possibility of emissions.

**ANSWER:** Extraction's CDP presents air monitoring and air mitigation measures. There are also numerous BMPs included in the Operator Agreement that address fugitive emissions and dust pollution that were in response to the work conducted by the citizen Task Force.

8. **Electrification:** Citizens presented comments on whether Extraction had a contingency plan to electrical outages since it Extraction's plan contemplates the use of electricity to power drilling rigs and completions.

**ANSWER:** Extraction has anticipated back up power options in the event of an outage. Such alternative sources of power are presented in the Electrification plan.

9. **Use of Third-party Contractors:** Comments included the ability for Extraction to shift liability to either working interest owners or third-party contractors.

**ANSWER:** Third-Party Contractors will have appropriate contractor licenses and insurance.

**10. Risk Management:** Citizens presented comments on the Risk Management Plan. Citizens recommended that a qualitative risk analysis be included to quantify risks. Citizens requested that Extraction's Risk Management Plan include various risks presented in Extraction's SEC filings.

**ANSWER:** The various risks will be considered in the TRP. BMP 55 of Exhibit B to the Operator Agreement states that "Operator agrees to provide a risk management plan, which will include the identification of potential risks, methods of risk avoidance and controls that implement techniques to prevent accidents and losses and reduce the impact or cost after the occurrence of identified potential events." The Operator Agreement does not require a qualitative risk analysis.

**11. Future Water Reservoir:** Citizens commented on the proximity of the location of the future water reservoir to the Livingston well site.

**ANSWER:** There are numerous provisions in the Operator Agreement and BMP exhibits that are specifically designed to protect groundwater and the surrounding environment throughout the course of our operations and production. We will additionally comply with all regulatory requirements governing oil and gas development that ensure protection of our natural environment. Additionally, oil and gas operations at the Livingston well site were contemplated and agreed to by the City long before the future water reservoir was contemplated.

**12. Noise:** Citizens presented concern as to analysis of the C-scale noise assessment and mitigation.

**ANSWER:** Extraction has a Noise Mitigation Plan and has committed to multiple BMPs addressing noise in the Operator Agreement. Extraction plans to comply with all terms in the Operator Agreement and understands that non-compliance could result in enforcement actions.

**13. Wildlife and Wetlands Protection:** Citizen comment involved the raptors breeding and mating seasons.

**ANSWER:** Extraction has addressed raptors in its Wildlife Report and Wetlands Protection Plan. Extraction will submit a 20-day Environmental Clearance Letter. Also see response to comment #176.

**14. Loss of Broomfield Royalties:** Citizen comments addressed the reduction in the number of wells leading to the reduction of revenue in terms of royalties to Broomfield. There was concern that Broomfield paid for the relinquishment of drilling windows.

**ANSWER:** Our wellbore spacing and completion designs are engineered to optimize full recovery of this reservoir based on the number of wells we will be

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drilling. This project is among the most thoughtful and technologically innovative drilling programs we are aware of that also includes the removal of more than 40 legacy vertical wells.

### **Conclusion**

Extraction will supplement its responses as necessary with certain items. Extraction may revise sections of various plans and will submit any updated sections. Extraction believes it has responded to all comments and requests and timely approval of this CDP in accordance with the mutually agreed upon Operator Agreement. As previously stated, nothing in these responses should be construed as a waiver or amendment to the Operator Agreement or any other agreement entered into between the City and Extraction. As always, we remain committed to working with the City and County of Broomfield, its citizens, our neighbors and other stakeholders as we continue planning this best in class project.