EAO Response to Data Gaps

This document has been prepared to respond to data gaps identified by the Bureau of Land Management (BLM), Vernal Field Office regarding Enefit American Oil's (EAO) utility corridor and Dragon Road improvement right-of-way (ROW) application pertaining to the BLM's Utility Corridor Project Environmental Impact Statement (EIS). Data gaps were transmitted by the BLM in two files – one specifically addressing gaps in baseline data (*EPG-BLM_BaselineReport_DataGapReview_7-18-14_trackchanges.docx*), the second specifically addressing gaps in EAO's Detailed Plan of Development (DPOD; *EPG-BLM_POD_DataGapReview_6-24-14.docx*). Data gaps were identified both for the utility corridor portion of the application ("the Utility Corridor Project"), as well as for EAO's private land development (referred to as "the South Project"). Comments are addressed below accordingly and organized by data gap filename, original document/section (where provided by BLM), data gap text, and EAO response. It should be noted that the source documents will not be reissued as subsequent revisions; rather, all responses will be directly addressed herein.

EPG-BLM_BaselineReport_DataGapReview_7-18-14_trackchanges.docx

Baseline Community Analysis (BCA; Prepared by GSBS Richman Consulting, April 2014)

Data Gap No. 1

"There is no assessment of the location of environmental justice populations in proximity to the project. This may be undertaken as a separate evaluation from socioeconomics, but regardless, would need to be evaluated, especially due to the presence of the Uintah and Ouray Indian Reservation. To identify potential minority and poverty populations within a specified proximity to the project area, it is necessary to provide an evaluation at a finer geographic detail (e.g., Census blocks, block groups, Tracts) in the Affected Environment."

EAO Response:

On February 11, 1994, Executive Order 12898 on Environmental Justice in Minority Populations and Low Income Population established policy requiring the analysis and evaluation of impacts of any proposed project, action, or decision on minority and low-income populations and communities, as well as the equity of distribution of the benefits and risks of those decisions. The United States Census Bureau's 2008-2012 American Community Survey indicates that, in Uintah County, low-income populations (i.e., families whose annual income is below the poverty level) comprise the following percentages of the population:

- All families – 6.9% (±1.9% margin of error [MOE]);
- Families with related children under 18 years – 9.4% (±2.6% MOE);
- Families with related children under 5 years only – 4.5% (±3.3% MOE);
- Married couple families – 2.9% (±1.2% MOE);
- Married couple families with related children under 18 years – 3.7% (±1.9% MOE);
- Married couple families with related children under 5 years only – 1.9% (±2.9% MOE);

- Families with female householder, no husband present – 30.5 (±10.9 MOE)%
- Families with female householder, no husband present, with related children under 18 years – 35.1% (±13.7% MOE); and
- Families with female householder, no husband present, with related children under 5 years only – 16.4% (±16.6% MOE).

Minority racial and ethnic populations found in Uintah, Duchesne, and Rio Blanco (CO) Counties (including Native Americans) can be found in Table 4 of the BCA.

Data Gap No. 2

"The baseline community analysis lacks any geographic descriptions of the study area, which should include land area, population density, and land ownership (i.e., federal, state, private, Native American)."

EAO Response:

Section 1 of the BCA describes the study area for socioeconomic effects as Uintah, Duchesne, and Rio Blanco (CO) Counties, including providing a figure depicting the area. It should be noted that the BCA has been prepared to inform socioeconomic effects of both the Utility Corridor Project and the South Project; therefore, the defined study area extends beyond simply the Utility Corridor Project area. Within Uintah County, where the Utility Corridor Project is proposed and where the majority of socioeconomic impacts associated with the Utility Corridor Project are anticipated to occur, the total land area is 4,477 square miles (2,865,280 acres) and a population of 26,296 persons, yielding a population density of 5.9 persons per square mile (0.009 persons per acre)[1]. Land ownership within the county consists of 60% Federal government, 16% Native American, 15% Private, and 9% State.

Data Gap No. 3

"The baseline community analysis lacks any description of fiscal resources in the study area. The development and operations of this project could result in property taxes to the study area. The Affected Environment[ ] should include a description of the appropriate taxes to which the utility corridor would be subject (e.g. property taxes) as well as the typical approach to estimate these taxes. Current property taxes levied or received by the county should also be provided. For cumulative effects, a description of the taxes to which the South Project would be subject and approach to estimate these taxes should be provided."

EAO Response:

According to the Uintah County Assessor's Office, tax rates are set by procedures outlined in the Utah Constitution, with rates varying depending on where the property is located (e.g. county, city, water/sewer districts, etc.). The assessed value of real property in Uintah County is established by the Assessor's Office, and Utah law requires a review of property characteristics at least once every five years. Property value is created by transactions in the market place, and the Assessor is required to value

[1] Utah State University Cooperative Extension, AG/Econ/county-2005-27 Available at https://extension.usu.edu/files/publications/publication/AG_Econ_county-2005-27.pdf.

each parcel based on current market data (i.e. sales comparables) and property inspections. The Assessor adjusts assessed value up or down as the market changes.[2]

Regarding the Utility Corridor Project, as indicated in Tables 4-1 through 4-6 in the DPOD, there is a total of 149.47 acres of private land proposed for the utility corridor and 5.74 acres of private land proposed for the Dragon Road improvement. Of that private land acreage, EAO owns 54.78 surface acres, with the remaining 100.43 surface acres owned by other private parties. The most recent property taxes levied on EAO's private property in the utility corridor area were a total of $156.99, while the most recent property taxes levied on all other private landowners in the utility corridor area were a total of $14.48 (note that this is for the entire private parcel acreage, not just the acreage overlain by the proposed utility corridor). However, the current land uses and/or zoning for these private lands are not anticipated to change, and only minimal surface facilities would be located on these private lands resulting in a potential increase in property valuation; therefore, no significant alterations to property taxes are anticipated to occur as a result of the Utility Corridor Project.

Regarding the connected non-Federal South Project action, GSBS Richman Consulting prepared a socioeconomics impact assessment for EAO in June 2014. While the document itself contains confidential business information and is not considered public, some key results pertaining to the data gaps identified by BLM can be provided here. The socioeconomic impacts of the South Project were modeled by GSBS Richman Consulting utilizing the IMPLAN modeling software plan, using projected capital and operating investments and South Project anticipated revenues provided by EAO. The South Project private property is located within unincorporated Uintah County, in the MG1 – Mining and Grazing zone. No changes to the current property zoning are anticipated to be required for the South Project, although the construction and operation of mining and mineral processing facilities are expected to increase the overall property valuation for the reasons provided in the opening paragraph of this data gap response. The estimated annual tax benefits as a result of the South Project, by level of government, were calculated by GSBS Richman Consulting and are provided in Table 1 below.

Table 1. Estimated annual tax revenue by level of government.

	Vernal	Uintah County	Total
Sales & Use Tax (2014$)	$358,241	$904,926	$1,263,167
Property Tax (2014$)	$43,799	$4,122,034	$4,165,832
Total (2014$)	$402,040	$5,026,960	$5,429,000

Data Gap No. 4

"Although the introduction of Section 2 provides some description of the historic and cultural context of the region, BLM Land Use Planning Handbook Appendix D provides guidance on including social

[2] Uintah County Assessor's Office, Frequently Asked Questions. Available at http://www.co.uintah.ut.us/assessor/asoquestions.pdf.

organization and institutions and attitudes and meanings. There is some description about how the communities have evolved with boom/bust cycles, but additional information could be provided on social organizations (e.g. stakeholders), interactions among various stakeholders and communities of interests (e.g. extraction and recreation), and how the communities have learned from and/or remain vulnerable to these economic cycles." (BCA, Section 2, page 4)

EAO Response:

Section 1.1 of the BCA provides an extensive list of stakeholders in the region with which EAO has coordinated and/or provided Utility Corridor Project and South Project information. According to the *Uintah Conference Center Feasibility Analysis*[3], Uintah County has consistently been the source of approximately 26 percent of crude oil and 65 percent of natural gas production in the State of Utah, with production remaining relatively strong in spite of some downward pressure in pricing (particularly in natural gas). In addition to the energy sector, Uintah County also holds a strong position in the tourism industry, situated as a primary access point to Dinosaur National Monument, the High Uintas wilderness area, and other fishing, boating and camping opportunities. Population growth from the period 1990 through 2000 was an average of 1.3 percent annually, significantly lower than the state average of 2.6. However, growth from the 2000 through 2010, when the energy sector experienced significant growth, increased to an annual average of 2.6 percent, while the state average dropped to 2.1 during the same period. The Governor's Office of Management and Budget predicts that Uintah County will achieve a population of 38,300 by the year 2020, representing an average annual growth rate of 1.8 percent. It should also be noted that, as stated in Section 3.2 of the BCA, overall personal income from wages and salaries in the study area are twice as high in 2012 than 2001. Therefore, after a significant "boom" cycle due to energy sector growth, the growth rate is expected to stabilize, allowing the community to more readily absorb potential future "bust" periods. The diversification of the region's economy, both within the energy sector due to expansion of unconventional energy resources as well as in such other categories such as tourism, position Uintah County for a period of stable growth in the future.

<u>Data Gap No. 5</u>

"This housing section presents relevant information to the analysis. However, the section should focus on the numbers (not percentages) of currently available housing units (for rent or for sale) for the potential construction and operational workforce. Communities in close proximity to the project location should be highlighted in terms of the number of available housing units. Additionally, this section should also provide some information on temporary lodging (i.e., RV parks, motels, and hotels) availability and the impact of the tourism season on the lodging availability. This would be relevant for housing the construction workforce." (BCA, Section 2-6, pages 16-17)

[3] C.H. Johnson Consulting, Inc. 2013. Uintah conference center feasibility analysis. Prepared for Uintah County, Utah by C.H. Johnson Consulting and GSBS Richman Consulting. 88 pp. Available at http://www.co.uintah.ut.us/comm/Uintah%20County%20Conference%20Center%20Feasibility%20Analysis_4%2018%2013%20FINAL.pdf?orgid=226704

EAO Response:

Table 9 of the BCA provides the number of vacant housing units (in addition to the percentage) in the following categories: *For rent*; *Rented*, *not occupied*; *For sale only*; *Sold, not occupied*; *Seasonal, recreational, occasional*; and *All other vacants*. The values provided in that table are from the U.S. Census Bureau's 2010 data, which is the most recent published data available. Actual day-to-day changes in the residential real estate market are not readily available, although the number of residential building permits and units constructed between 2010 and 2013 are provided in Table 2 below. Utilizing the vacancy percentages presented in Table 9 of the BCA, together with the number of residential units recently constructed, could provide an indicator of potential current vacancies. Although Vernal is the closest community proximal to the Utility Corridor Project, the relatively brief duration of the utility corridor construction is not anticipated to drive new residential construction beyond that occurring as part of the larger regional population growth. It is important to note that the construction workforce for the Utility Corridor Project will be separate from that of the South Project because of their distinctly different construction timeframes. Further, there would be no operational workforce for the Utility Corridor Project.

Table 2. Residential buildling permits issued, Uintah County 2010-2013.

Residential Building Category	Buildings	Number of Units
Single Family	978	978
Two Family	6	12
Three and Four Family	0	0
Five or More Family	14	344
Total	998	1,334

Source: U.S. Census Bureau

Regarding temporary lodging availability, Table 3-9 in the *Uintah Conference Center Feasibility Analysis* indicates that the Vernal area has a total of 941 hotel rooms, with an average occupancy rate of 73 percent. The State of Utah's Bureau of Economic and Business Research prepared a travel and tourism profile for Uintah County in July 2014[4], providing hotel occupancy data by month during the years 2012 and 2013. Occupancy rates for Uintah and Carbon Counties (data are aggregated for both) peak at just under 80 percent during the June-July-August summer season, dipping to below 40 percent in December.

[4] Available at https://bebr.business.utah.edu/sites/default/files/tourismprofile_uintahcounty.pdf

Data Gap No. 6

"Current enrollment in schools within the study area is provided in the assessment. However, to better understand the potential impacts to schools, additional information on enrollment relevant to school capacity in proximately schools and/or districts should be provided." (BCA, Section 2-7-1, page 20)

EAO Response:

Regarding the Utility Corridor Project, the relatively brief duration of construction (and no permanent workforce dedicated solely to the utility corridor itself) is not anticipated to have any effect on specific school and/or district enrollment. Construction workers are anticipated to relocate only temporarily for the duration of construction, rather than relocate their entire family and situate long-term in the community.

Regarding the South Project, GSBS Richman Consulting analyzed population growth as part of the socioeconomic impact assessment. If household composition in the new households (i.e. those resulting from South Project-induced population growth) is similar to existing household composition, there would be approximately 2,200 new children in the K-12 education system by 2020. This represents a 20 percent increase in school enrollment over current Uintah County enrollments. At a current student-teacher ratio of 23 to 1, this would require an additional 95 teachers. With regards to specific school and/or district enrollment, it is impossible to say where this growth would occur in the area. Rather, it is likely that growth would be dispersed throughout the area as the residential real estate market, city/county growth management, and regional infrastructure and services dictate.

Data Gap No. 7

"BLM requests emissions inventory information for the (1) right-of-way project and (2) surface mine and processing plant (South Project), if available. If not available, please advise BLM when Enefit expects the information to be available (even it if it is years down the road, long past the completion of the BLM EIS). BLM requires the information to determine the level of analysis in indirect/cumulative effects adequate for NEPA compliance in accordance with BLM NEPA Handbook section 6.85.2 and 40 CFR 1502.22."

EAO Response:

An estimated emissions inventory for the Utility Corridor Project based on the anticipated types of construction equipment, operating durations, emission factors, etc. is provided in Annex 1 at the end of this document.

Emissions associated with the South Project are not available at this time, as the level of engineering detail required to support an emissions inventory for the South Project is not anticipated to be complete until following the completion of the utility ROW application process. The availability of utilities to EAO may influence certain mining and mineral processing design considerations and decisions, which in turn may affect the emissions profile of the South Project facilities (as was previously indicated in an email from Ryan Clerico, EAO to Stephanie Howard, BLM July 14, 2014). However, as stated in Section 2.1 of the DPOD, EAO anticipates that the emissions from the South Project will exceed thresholds for major

sources (as defined by the Environmental Protection Agency [EPA]) regardless of utility availability, thus requiring a Prevention of Significant Deterioration permit from the EPA under all potential Utility Corridor Project alternatives. EPA Region 8 is anticipated to be the regulatory authority for air emissions, as the South Project is located within Indian Country.

Data Gap No. 8

"BLM requests information from Enefit regarding the timing of Prevention of Significant Deterioration (PSD) modeling anticipated to be performed to support permitting for the surface mine and processing plant. BLM requests the information to determine whether the timing of the PSD modeling could be such to allow the modeling results to be referenced (and potentially support analysis) in the EIS."

EAO Response:

As noted above in the response to Data Gap No. 7, the timing of PSD modeling to support permitting for the surface mine and processing plant is anticipated to be beyond the timeline of the Utility Corridor Project EIS, as a number of mining and mineral processing design considerations may be influenced by the availability of utilities to the private land. Therefore, it is not expected that the availability of PSD modeling could be such to allow the modeling results to be referenced in and/or support analysis in the Utility Corridor Project EIS.

Data Gap No. 9

"After review of the revised *Visual and Noise Resources Technical Report* (SWCA, November 2013), all data gaps identified in August 2013 have been addressed except the following:

'The identification of KOPs, and the contrast rating analysis, is first and foremost to identify compliance or noncompliance with BLM VRM Class objectives. As such, why was there no KOP identified at the Duck Rock recreation site (and overlook) on the White River which would have unobstructed views of the Project traversing BLM VRM Class II lands from approximately 0.75 mile away? This KOP could also be used to aid in the discussion of impacts on the White River SQRU (Class A) since the river crossing would be visible from this location.'

This data gap has been included in the data gap analysis until confirmation can be received from the BLM regarding inclusion of this KOP in the EIS."

EAO Response:

As stated in Section 2.2 of the *Visual and Noise Resources Technical Report*, key observation points (KOPs) were selected by conducting a viewshed analysis of the survey area, reviewing the BLM's Vernal Field Office resource management plan, and discussing and achieving consensus of the BLM on the proposed and final selection of KOPs. Appendix A of that report documents the discussion of KOP selection between SWCA and BLM staff.

EAO is currently in the process of contracting a qualified party to acquire suitable photography from the proposed Duck Rock KOP, as well as complete a visual simulation of the White River utility corridor

crossing. EAO will utilize the technical guidance provided by the BLM in an email from Michael Doyle to Ryan Clerico entitled "Duck Rock KOP" and dated August 19, 2014. It is anticipated that this data gap will be completed following completion of BLM's scope of analysis review and evaluation of outstanding data.

EPG-BLM_POD_DataGapReview_6-24-14.docx

Data Gap No. 10

"In the Data Gap Analysis dated August 29, 2013, we identified the need for the Traffic and Transportation Report (Plan) to be included in the POD. It is not in this version of the document and the information is needed for the EIS."

EAO Response:

The Traffic and Transportation Plan is provided as Annex 2 at the end of this document.

Data Gap No. 11

"How much water is needed for installation of the various pipelines and other infrastructure within the requested BLM right-of-way?" (DPOD Section 4.1.1, page 13)

EAO Response:

Water would be primarily required for two key uses in the ROW construction – fugitive dust control and hydrostatic testing of pipelines. Regarding fugitive dust control, construction site water trucks typically have tank capacities of 500 to 1,200 gallons. Effective dust control in arid areas generally requires cumulative daily application of 600 or more gallons per acre (typically in two or more sprinkling passes). At 5 miles per hour with a 10-foot spray width, a water truck can cover about 6.1 acres per hour (tank size and spray intensity will determine actual acreage covered per tank load).

EAO will be conducting additional utility corridor engineering fieldwork following completion of BLM's scope of analysis review and evaluation of outstanding data, to identify in more detail the limits of construction. However, in the interim, the preliminary ROW disturbance areas can be used to estimate water requirements for fugitive dust control. From Tables 4-1 through 4-6 of the DPOD, approximately 637.89 acres will be disturbed during the first mobilization (water line, first transmission line, Dragon road improvement, and temporary laydown areas), resulting in an average of 2.2 acres to be watered per day. During the second mobilization (natural gas line, product line, second transmission line, and re-use of temporary laydown areas), approximately 457.24 acres would be disturbed. At a water application rate of 600 gallons per acre (achieving a moistening depth of 0.0221 inches per pass), this would total 765,468 gallons of water during the first mobilization and 548,688 gallons of water during the second mobilization. It should be noted that not all construction days will require watering for dust control, nor will all surface area necessarily be fully-disturbed (particularly within the transmission line corridor); therefore, this is a conservative estimating approach.

Hydrostatic testing is addressed in Data Gap No. 39.

Data Gap No. 12

"Regarding the water source, we understand that Enefit plans to use excess water from the Deseret Power Plant, but how much water is available?" (DPOD Section 4.1.1, page 13)

EAO Response:

The water source is not necessarily excess water from Deseret Generation and Transmission's (DGT's) Bonanza Power Plant (BPP), but rather there is excess capacity in DGT's existing water conveyance system to transport water from the Green River. There is approximately 15 cubic feet per second (cfs) spare capacity in DGT's existing water conveyance system from the Green River to the BPP, and EAO has an agreement with DGT for access and transport of up to 15 cfs of an existing water right from the Green River to the South Project location. EAO is proposing construction of a new water conveyance system with up to 15 cfs capacity from the BPP to the South Project.

Data Gap No. 13

"Does water availability change during the year?" (DPOD Section 4.1.1, page 13)

EAO Response:

Water availability does change throughout the year. According to the United States Geological Survey's Jensen gauging station No. 09261000 on the Green River, the lowest average flow tends to occur in September (based on water data from 1947 - 2004), at an average monthly discharge rate of 1,895 cfs. However, water availability for the BPP and the South Project would be the same for all Utility Corridor Project alternatives.

Data Gap No. 14

"Is there anyone else currently using the excess Deseret water?" (DPOD Section 4.1.1, page 13)

EAO Response:

The current delivery rates of the existing system are included in DGT's standard operations and are not part of the 15 cfs excess capacity. Also, there are no other parties using the water right EAO is intending to use.

Data Gap No. 15

"Is the watershed fully allocated? What other uses are permitted in the watershed and Groundwater Basin?" (DPOD Section 4.1.1, page 13)

EAO Response:

The Green River and its tributaries form the headwaters of the largest tributary of the Colorado River. At the Jensen, UT gauging station located near the water withdrawal point, the total drainage area is 29,660 square miles. Water rights in the western United States are governed by the Colorado River Compact of

1922 and the 1948 Upper Colorado River Compact (as well as other subsequent agreements), with each of seven western states along the Colorado River and its tributaries apportioned a certain fraction of the water for appropriation. Under the Upper Compact, the State of Utah is apportioned approximately 1.4 million acre-feet per year from the Colorado River Basin. According to Utah law, the *application to appropriate* water is not actual appropriation of water. Only once proof of beneficial use has been filed with the State Engineer is that water actually considered appropriated.

However, it is important to note that the water right referenced in the DPOD is not subject to new appropriation; rather, it is a senior water right with a priority date of 1965, with proof of beneficial use due (via extension) by 2025. The Green River watershed is not fully allocated and, according to the recent court ruling relating to Blue Castle Holdings' leasing of water rights for a proposed nuclear power plant near Green River, Utah, there appears to be significant remaining water in the system even considering the water right available for the South Project. According to Judge George Harmond, "The court also notes that the United States Bureau of Reclamation estimates that even under a rapid growth scenario, by the year 2060, Utah will only have developed 1.38 million acre-feet of the 1.4 million acre-feet allotted to it under the Upper Compact."

In terms of other permitted uses, there are many in the Green River basin. According to the United States Department of Agriculture's Natural Resources Conservation Service[5], the land uses within Uintah County include the following:

- Forest 756,171 acres
- Grain Crops 5,726 acres
- Conservation Reserve Program 2,005 acres
- Grass/Pasture/Haylands 301,816 acres
- Orchards/Vineyards 31 acres
- Row Crops 2,982 acres
- Shrub/Rangeland 1,783,391 acres
- Water 8,433 acres
- Wetlands 6,417 acres
- Developed 15,362 acres
- Total 2,882,347 acres

Although this is not necessarily a list of permitted water users sourcing water from the Green River in Uintah County, this does give some indication as the types of water users that are in the area. Notably, agriculture categories total 10.77 percent of the land use in the county, while developed lands (such as the proposed South Project) total less than 1 percent. The State of Utah's Department of Natural Resources, Division of Water Rights, maintains a current database of all water rights for the state, searchable by water right number, name/source, point of diversion, place of use, and geographic. The water right database can be accessed at this location: http://www.waterrights.utah.gov/wrinfo/query.asp for the most up-to-date water right information.

[5] http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs141p2_032377.pdf

Regarding the groundwater basin, water withdrawal from groundwater is not currently being considered as part of this utility corridor application. Rather, a surface point of diversion from the Green River is proposed as the water supply method.

Data Gap No. 16

"How much water is needed for various activities associated with the mining project? Construction? Operations? Sanitary facilities? Timing for water needs?" (DPOD Section 4.1.1, page 13)

EAO Response:

EAO is still in the planning and preliminary engineering design process for the South Project mining and mineral processing facilities; therefore, water supply amounts for various construction and operation processes are only available as preliminary estimates at this time. At the 33rd Oil Shale Symposium held at the Colorado School of Mines in October 2013, EAO chief executive officer Rikki Hrenko presented the following information regarding water use for the South Project:

First 25,000 Barrels per Day Phase (first four years of operation)

- Mining – 2.48 cfs (including 1.46 cfs treated water reuse and 0.87 cfs raw water);
- Retorting and Upgrading – 0.74 cfs;
- Utility and Power Generation – 0.88 cfs; and
- Other Uses – 0.09 cfs.

Full 50,000 Barrels per Day Build-Out (30 years of operation)

- Mining – 4.33 cfs (including 3.04 cfs treated water reuse and 1.29 cfs raw water);
- Retorting and Upgrading – 1.78 cfs;
- Utility and Power Generation – 1.63 cfs; and
- Other Uses – 0.09 cfs.

It is important to note that these water use estimates are preliminary and subject to change based on ongoing engineering of the private-land development South Project. Final/actual water use values will not be known until EAO completes engineering of the private land development, although it is important to note that water use is anticipated to be the same for all Utility Corridor Project action alternatives. As with air emissions, engineering design and development of South Project with regard to water use may be affected by the availability of utilities to the South Project; therefore, water use information cannot be confirmed until after the BLM's utility corridor EIS process is complete. EAO has considered the appropriate pipeline size to deliver the full 15 cfs available under the water right and agreement with DGT.

Regarding timing of water needs, the water supply pipeline proposed as part of the Utility Corridor Project would be constructed prior to the onset of construction of the South Project, as water is needed at the private land for such construction activities as concrete mixing and dust control. It should be

noted that full operational water use would not occur until after construction of the full build-out of the South Project is complete.

Data Gap No. 17

"Where will this water be sourced? Deseret Power Plant? Again, same questions as above. How much water is available? Does water availability change during the year." (DPOD Section 4.1.1, page 13)

EAO Response:

Water for construction of the Utility Corridor Project would likely be sourced from DGT's BPP. This water would primarily be used for fugitive dust control and hydrostatic testing of the proposed pipelines. See Data Gap No. 39 for additional information regarding hydrostatic testing. Regarding availability of water, see responses above. DGT has existing conveyance facilities from the Green River to the BPP with spare capacity; therefore, water would be available at the onset of utility corridor construction.

Data Gap No. 18

"What other uses are permitted in the watershed? Pending permits?" (DPOD Section 4.1.1, page 13)

EAO Response:

See response to Data Gap No. 15 above regarding permitted uses in the watershed.

Data Gap No. 19

"What reasonably foreseeable future actions are proposed in the watershed? Groundwater Basin?" (DPOD Section 4.1.1, page 13)

EAO Response:

The Green River basin is a massive watershed, totaling nearly 30,000 square miles at the proposed withdrawal point from the Green River near Jensen, Utah. EAO believes that it is beyond the scope of this utility corridor ROW application and EIS to identify and consider reasonably foreseeable future actions (RFFAs) throughout the Green River watershed. Instead, EAO has focused on identifying RFFAs within the southeastern portion of Uintah County, and within a reasonable range downstream on the Green River, that are similar industrial-type water users. EAO has identified the following RFFAs through a review of recent press releases and public notifications (although it is not expected that all would be simultaneously withdrawing water from the Green River, nor would they necessarily withdraw water at the same rates):

- DGT BPP Unit 2 expansion;
- Red Leaf Resources' oil shale project;
- U.S. Oil Sands' tar sands project;
- Blue Castle Holdings' nuclear power plant project; and
- Rock River Resources' Emery Refinery.

It should be noted that EAO makes no assessment of the likelihood of any or all of these RFFAs coming to fruition. Rather, these are simply the projects that appear in the public domain as possible in the future.

As stated above in the response to Data Gap No. 15, groundwater withdrawal is not currently proposed.

Data Gap No. 19

"Will water need to be treated before use? After use?" (DPOD Section 4.1.1, page 13)

EAO Response:

Water used for fugitive dust control and hydrostatic testing of newly-constructed pipelines would not need to be treated before use. Water used for fugitive dust control would require no post-use treatment, as that water would either infiltrate or evaporate from the ground surface and return to the environment. Water used for hydrostatic testing would not require post-use treatment; however, because of high discharge rates from the pressure-tested pipeline, hydrostatic test water would be discharged to an energy dissipation device to prevent erosion and offsite sediment transport. Further information regarding hydrostatic test water discharge is provided in the response to Data Gap No. 39.

Data Gap No. 20

"How will wastewater be treated? Disposed of?" (DPOD Section 4.1.1, page 13)

EAO Response:

There is no "wastewater" anticipated to be produced as a result of the Utility Corridor Project. Hydrostatic test water would be discharged to an energy dissipation device, and then to a vegetated upland area, and allowed to infiltrate and/or evaporate. No special treatment of this water is anticipated to be required.

Data Gap No. 21

"In the July 31, 2013 comments on the Preliminary Draft Chapter 2 – Proposed Action and Alternatives text that were provided to Enefit by the BLM, temporary acres of disturbance were requested along with permanent acres of disturbance for the water, gas, product supply pipelines. Tables 4-1, 4-2, and 4-3 only address permanent disturbance for each pipe at 50 feet wide. Please confirm that all temporary disturbance for the pipelines will occur within the 50-100 ft wide permanent right-of-way grant for the pipelines." (DPOD Sections 4.1.1, 4.1.2, and 4.1.3, pages 13-14)

EAO Response:

The temporary and permanent areas of disturbance are to be refined based on ROW engineering fieldwork to be conducted upon completion of additional utility corridor fieldwork and engineering by EAO following the BLM's scope of analysis decision and evaluation of outstanding data. However, the current typical section for construction of the pipeline ROW, as shown in Figure 4-1 of the DPOP, utilizes

construction from the center of the ROW, such that temporary disturbance is primarily confined to permanent ROW area.

Data Gap No. 22

"When the pipeline segments of the utility corridor are built, it is understood that a construction access road will be developed in the ROW. In areas where the transmission line will be built parallel to the pipeline, is it the intent to use the same access roads as well? In areas where only the transmission line will be built, how does Enefit plan to access those areas without spur roads or new access? The existing access roads on the Appendix B map do not cover all segments of the utility corridors, so either new roads or spur roads will need to be built. To clarify, please provide the following:

- More detailed information on access in areas where the pipeline/transmission line will be built together.
- Access road plans in areas where only the transmission line will be constructed." (DPOD Section 4.2, page 16)

EAO Response:

The access roads proposed for the Utility Corridor Project are to be refined based on ROW engineering fieldwork that will be conducted by EAO following the BLM's scope of analysis decision and evaluation of outstanding data.

Data Gap No. 23

"In the July 31, 2013, comments on the Preliminary Draft Chapter 2 – Proposed Action and Alternatives text that were provided to Enefit by the BLM, the following information was requested from Enefit and is missing from this version of the document:

- Additional information on typical transmission line specifications: height of structures, width, diameter; conductor materials and specs; acres of temporary and permanent disturbance associated with pulling and tensioning sites, wire splicing sites, structure work areas, communication sites, and substations. (please refer to Table 2-1 in Preliminary Draft Chapter 2 dated July 31, 2013 for an example of how this information could be outlined.)
- Tower structure materials is referred to as steel in the POD – please clarify if it is galvanized steel or self-weathering steel." (DPOD Section 4.2, page 16)

EAO Response:

Details on the transmission line engineering specifications are to be refined based on ROW engineering fieldwork that EAO will conduct following the BLM's scope of analysis decision and evaluation of outstanding data.

Data Gap No. 24

"In addition, information on the 8.44-acre switchyard on BLM-administered land needs to be detailed and described. Information should include:

- Approximate site size (dimensions that equate to 8.44 acres)
- Equipment in the yard
- Access roads required for construction, operation, and maintenance
- Fire protection facilities
- Grounding
- Acres of permanent and temporary disturbance
- Voltage" (DPOD Section 4.2, page 16)

EAO Response:

Details on the switchyard specifications are to be refined based on ROW engineering fieldwork that EAO will conduct following the BLM's scope of analysis decision and evaluation of outstanding data.

Data Gap No. 25

"If the new alignment of Dragon Road is built, what will happen to the old alignment and pavement – left in place or ripped and restored? If the lat[t]er, please describe the acreages involved and restoration process to be used." (DPOD Section 4.4)

EAO Response:

EAO is nearing completion of preliminary engineering for the Dragon Road upgrade and has received approval from the Uintah County Roads Department on the design, including routing, grades, ROW width, design speed, turn lanes, etc. The new alignment of Dragon Road utilizes nearly 70 percent of the existing Dragon Road alignment, with only 9.5 acres of the old Dragon Road alignment remaining following the upgrade. The existing Dragon Road is a Uintah County public ROW; therefore, the ultimate decision regarding the fate of the old alignment and pavement (if present; only minimal portions of the existing alignment exhibit remnants of relic paving) will be held by the County. However, EAO's current plan is to leave those few remaining areas outside the new alignment in place. Should the County decide that the remaining 9.5 acres of the old Dragon Road are no longer usable and warrant removal, EAO would follow the guidance provided in the BLM's *Green River District Reclamation Guidelines* for reclaimed areas.

Data Gap No. 26

"We question the assumption that there will be no upgrade or improvements to existing roads for construction access. Please provide more information on the existing access road plan to verify no upgrades or improvements will be needed. Information in a table format should include:

- Proposed access road numbering system (or some sort of identification system)

- Current access road base material (i.e., paved, gravel, dirt)
- Land ownership
- Road length (miles)
- Road width and acreage
- Adequacy to handle construction traffic (i.e., cranes, lowboy trailers, etc.) and if improvements are required." (DPOD Section 4.5, page 18)

EAO Response:

The access roads proposed for the Utility Corridor Project are to be refined based on ROW engineering fieldwork to be conducted following the BLM's scope of analysis decision and evaluation of outstanding data.

Data Gap No. 27

"Of the utilities identified for relocation, are any historic resources?" (DPOD Section 4.6, page 18, last paragraph)

EAO Response:

The utilities identified for relocation were within the cultural resources inventory area (shown in Figure 1-1 of the *Class III Cultural Resources Inventory of the Utah Oil Shale Project, in Uintah County, Utah* (SWCA 2013). None of the utilities were identified as cultural resources in that report.

Data Gap No. 28

"How would inspection and reclamation be carried out for the relocated sections of these utilities? Would cultural resource monitoring occur during these activities?" (DPOD Section 4.6, page 18, last paragraph)

EAO Response:

Inspection and reclamation methods for the relocated utilities would be the same as those proposed for the Utility Corridor Project. The utilities identified for relocation, as well as the anticipated relocation areas, were within the cultural resources inventory area but were not identified as cultural resources themselves. All utility relocations would occur within the South Project private property boundary and are a result of the South Project development activities, rather than the Utility Corridor Project. Cultural resource monitoring for the utility relocations on private land is not currently anticipated (although effects of utility relocations on private land as a result of South Project development are beyond the scope of this EIS).

Data Gap No. 29

"When the location and construction method of crossing the White River is determined, will there be consideration of resource effects from different options? For visual resources, an underground option

would be preferred over the utility bridge option due to the visual sensitivity of this area." (DPOD Section 4.7.1, page 19)

EAO Response:

EAO has completed an extensive analysis of utility crossing locations and construction methods for the White River crossing. That analysis incorporated a variety of resource effects, including visual resources. The final report is provided as Annex 3 to this document.

Data Gap No. 30

"Please describe the activities planned for geotechnical investigations of the pipelines and transmission line, as requested in July 2013." (DPOD Section 5, page 20)

EAO Response:

The activities planned for geotechnical investigations of the pipelines and transmission lines will be more thoroughly defined following the BLM's scope of analysis decision and evaluation of outstanding data. However, generally speaking, EAO would (with prior landowner authorization, where applicable) mobilize a geotechnical drilling crew to characterize the near-surface geotechnical conditions. The drilling crew is anticipated to consist of rubber-tire mounted drilling equipment, with drilling depths to approximately 10 feet in most areas, 20 to 40 feet at transmission line pole structure locations, and up to 100 feet at the White River pipeline crossing location. The White River crossing location is the most important for characterizing geotechnical conditions, as those conditions directly affect the success potential of the proposed trenchless crossing construction method.

Data Gap No. 31

"Need corridor construction phase information on a periodic basis for the number, type, type of fuel, monthly level of use (e.g., hours or days/month) and approximate horsepower of each category of construction equipment and vehicles" (DPOD Section 5.1, pages 20-28)

EAO Response:

The list of equipment and levels of use are provided in Tables A1-1 and A1-2 in Annex 1. For the purposes of estimating emissions, it was assumed that construction would occur 24 days per month (6 days per week) and 10 hours per day (i.e. single shift). It has further been assumed that all construction equipment would consume diesel fuel, with the exception of 3/4-ton pickup trucks and service trucks, which would consume standard gasoline. The approximate horsepower of each equipment is not yet know, as specific equipment pieces and mobilization logistics would be decided by the construction contractor. For the purposes of estimating emissions, the "composite" category has been used, where applicable. For 3/4-ton pickup trucks, the 175-horsepower category was assumed, and for service trucks the 250-horsepower category was assumed.

Data Gap No. 32

"Need corridor construction phase information for number and horsepower for planned crushers, screeners, and material stockpiling equipment." (DPOD Section 5.1, pages 20-28)

EAO Response:

The construction equipment numbers, by mobilization, are provided in the response to Data Gap No. 31.

Data Gap No. 33

"Need corridor construction phase information for tons per hour capacity and periodic operating schedule for planned fuel-fired crushers, screeners, and material stockpiling equipment." (DPOD Section 5.1, pages 20-28)

EAO Response:

The construction equipment numbers, by mobilization are provided in the response to Data Gap No. 31.

Data Gap No. 34

"Need corridor construction phase information on number of construction works and staff, per month or per construction phase, for commute vehicle emission estimates." (DPOD Section 5.1, pages 20-28)

EAO Response:

Commute vehicle emission estimates have been included in the response to Data Gap No. 7. For that calculation, a total of 85 daily construction commuters were assumed for the first construction mobilization (water supply pipeline and first transmission line), followed by 110 construction commuters during the second construction mobilization (natural gas and product pipelines, second transmission line, and switchyard). It was further assumed that the average daily commute per construction worker was 40 miles.

Data Gap No. 35

"Need corridor construction phase information on number, type, type of fuel, monthly level of use (e.g., hours or days/month) for non-vehicle fuel fired equipment (e.g., generators, pumps)." (DPOD Section 5.1, pages 20-28)

EAO Response:

There are currently no non-vehicle fuel fired equipment pieces in the corridor construction equipment list used for emission estimates. However, EAO recently completed preliminary engineering of the White River utility corridor crossing, which indicated that microtunneling (instead of the previously-identified horizontal directional drilling) as the preferred construction method for trenchless crossing of the river. Microtunneling would require a pump for dewatering of the equipment launch and receiving pits, although that pump has not yet been sized.

Data Gap No. 36

"If a working busing program is planned, the number of buses and estimated route lengths and trips per day." (DPOD Section 5.1, pages 20-28)

EAO Response:

A working busing program is not currently planned for the utility corridor construction. EAO has conservatively assumed, for emission estimating purposes, a daily commute of 40 miles per construction worker in each construction phase.

Data Gap No. 37

"Identify planned fugitive dust mitigation measures for construction roadways, stockpiles, and material transfer points (e.g., watering, suppresants, vehicle speed limits, etc.)" (DPOD Section 5.1, pages 20-28)

EAO Response:

A Fugitive Dust Control Plan is provided in Annex 4.

Data Gap No. 38

"Will there be any level of standardized cultural resource monitoring during trenching and excavation activities for the Project as a whole? (not just in proximity to known sites)" (DPOD Sections 5.1.3 and 5.1.10.1, pages 22 and 27)

EAO Response:

Standardized cultural resource monitoring (beyond proximal to known sites) is not anticipated for the Utility Corridor Project at this time. Based upon the results of the *Class III Cultural Resources Inventory of the Utah Oil Shale Project, in Uintah County, Utah* (SWCA 2013), which involved intensive pedestrian surveys of the proposed ROW, additional subsurface cultural resource findings are not anticipated. As indicated in Section 9.1.1 of DPOD, EAO would educate their contractors and employees about the relevant federal regulations intended to protect cultural resources and, in the event unanticipated discovery of cultural resources occurs, operations in the immediate area would be suspended until written authorization to proceed is issued by the appropriate surface management agency.

Data Gap No. 39

"What is the water discharge plans for hydrostatic testing of the pipelines? This can be a significant volume of water and needs to be addressed in the EIS." (DPOD Section 5.1.8, page 24)

EAO Response:

In addition to fugitive dust control, hydrostatic testing is the other significant water consumer for the utility corridor project. A hydrostatic test plan, addressing water discharge location and methods, will be developed by EAO following completion of BLM's scope of analysis review and evaluation of outstanding

data. However, in the interim, a reasonable estimate can be made about the volume of water required for hydrostatic testing. The following pipeline volumes can be used in this estimation:

- Water pipeline diameter of 30 inches and a 19.03-mile (100,478 feet) run length, or a total volume of 493,222 cubic feet;
- Natural pipeline diameter of 8 inches and 8.88-mile (46,886 feet) run length, or a total volume of 16,366 cubic feet; and
- Product pipeline diameter of 16 inches and 11.20-mile (59,136 feet) run length, or a total volume of 82,569 cubic feet.

It is reasonable to assume that any one entire pipeline would not be filled with water during hydrostatic testing. Rather, approximately one-third of the total volume would be filled at any one time, and that volume of water would be "pushed" from one hydrostatic testing section to the next. Using a conversion factor of 7.480519 gallons of water per cubic foot, the water supply pipeline would then require 164,407 cubic feet, or approximately 1.23 million gallons, of water for hydrostatic testing during the first mobilization. During the second mobilization, assuming both natural gas and product pipelines were tested simultaneously under the same three-section assumption, this would require an additional 32,979 cubic feet, or approximately 246,697 gallons, of water.

The pipe used for the utility corridor project would be new. Typically, hydrostatic test water will pick up some iron oxide (rust) from new pipeline, depending on the total duration the water remains in the pipeline. The quantity of rust is generally negligible compared to the volume of water. The water may also pick up some sand or dirt left over from the pipeline installation. Water would be discharged at a rate commensurate with agency consultations and discharge permit requirements and would be in a manner that precludes erosion. The discharge would occur into a temporary sediment basin or structure consisting of both hay bales and/or silt fence for sediment control. The discharge location would be at least 0.5 mile from any perennial stream with a flow greater than 1 cubic foot per second. Any potential contaminants in the discharge water would likely be below the required minimums; however, to ensure this condition, water would be collected and tested at a certified water testing laboratory prior to full release. The discharge location would be nearly level or gently rolling, vegetated upland areas to prevent erosion issues.

<u>Data Gap No. 40</u>

"Self-supporting steel towers and guyed structures are mentioned in this section but not previously as part of the project description. Please provide diagrams and details in Section 4.2." (DPOD Section 5.1.10.1, page 27)

EAO Response:

Transmission tower structural detail will be provided upon future utility corridor engineering, to be conducted by EAO following completion of BLM's scope of analysis review and evaluation of outstanding data.

Data Gap No. 41

"Need corridor construction phase information on number of personnel that will be on the site during different phases of construction, (for estimates of food waste, trash, etc.)" (DPOD Section 5.2.2, page 29)

EAO Response:

During the first construction mobilization, up to 85 workers have been assumed for emission estimating purposes. During the second construction mobilization, up to 110 workers have been assumed.

Data Gap No. 42

"Need corridor construction information on the plan for trash receptacles or contract services." (DPOD Section 5.2.2, page 29)

EAO Response:

Detailed construction site logistics are not yet available for the utility corridor, and EAO does not anticipate that they will be available until a construction contractor is selected (following completion of the ROW application/grant process).

Data Gap No. 43

"Need corridor construction information on packaging materials anticipated to become solid wastes (i.e. cardboard boxes, filters, conduit, wire, welding rods and other discarded construction materials, etc.)." (DPOD Section 5.2.2, page 29)

EAO Response:

Detailed construction information such as this is not yet available for the utility corridor, and EAO does not anticipate that it will be available until a construction contractor is selected (following completion of the ROW application/grant process). However, it is reasonable to assume that the solid waste material examples provided in the data gaps would occur during construction of the project. Standard construction materials are assumed; there are no unique or abnormal packaging materials that anticipated to be used.

Data Gap No. 44

"Need corridor construction information on procedure, containers and plan for disposition of used oil." (DPOD Section 5.2.2, page 29)

EAO Response:

Disposal of used oil and other waste material would be in compliance with local, state and Federal regulations governing the same.

Data Gap No. 45

"Need corridor construction plan for disposition of construction fill or removed solid materials." (DPOD Section 5.2.2, page 29)

EAO Response:

Construction fill or removed solid materials would be disposed of at a nearby landfill in accordance with local, state, and Federal regulations.

Data Gap No. 46

"Need corridor construction information on quantities and container sizes (where applicable) of all products/materials used, stored or produced during construction." (DPOD Sections 5.2.2 and 5.2.3, page 29)

EAO Response:

Detailed construction information such as this is not yet available for the utility corridor, and EAO does not anticipate that it will be available until a construction contractor is selected (following completion of the ROW application/grant process). However, it is reasonable to assume that typical pipeline and transmission line construction materials will be used.

Data Gap No. 47

"Need corridor construction information on estimated monthly throughput and maximum amounts of products/materials stored at any one time. Categories of materials anticipated include:

a. Fuels, gasoline, diesel
b. Herbicides/pesticides
c. Solvents
d. Oils, lubricants used in machinery maintenance
e. Coolants/antifreeze
f. Batteries
g. Paints and adhesives" (DPOD Sections 5.2.2 and 5.2.3, page 29)

EAO Response:

Detailed construction information such as this is not yet available for the utility corridor, and EAO does not anticipate that it will be available until a construction contractor is selected (following completion of the ROW application/grant process). However, it is reasonable to assume that typical pipeline and transmission line construction materials will be used. All storage and disposal of hazardous and potentially-hazardous materials would be in compliance with local, state and Federal regulations governing the same. Storage and clean-up of these materials would be in accordance with the *Spill Prevention, Control, Countermeasure and Reporting Plan* provided as Appendix F in the DPOD.

Data Gap No. 48

"Need corridor construction information on anticipated maintenance areas and description of activities, i.e. oil changes, lube, repair, etc." (DPOD Sections 5.2.2 and 5.2.3, page 29)

EAO Response:

Temporary laydown and staging areas have been identified in the DPOD, and additional staging areas may be identified upon completion of additional ROW engineering (which is scheduled to occur following completion of BLM's scope of analysis review and evaluation of outstanding data). Activities at these staging areas would include standard oil and lubrication, hose repair/replacement, tire/track repair, refueling, and other standard maintenance activities for diesel-fuel rubber-tire and track-mounted utility construction equipment.

Data Gap No. 49

"Provide any other relevant and available information pertaining to hazardous materials and solid wastes." (DPOD Sections 5.2.2 and 5.2.3, page 29)

EAO Response:

Transport, storage, disposal, and spill cleanup would be in accordance with local, state, and Federal regulations and with the *Spill Prevention, Control, Countermeasure and Reporting Plan* provided as Appendix F in the DPOD.

Data Gap No. 50

"Need corridor construction information on the plan/procedure for the delivery, storage and dispensing of hazardous material at construction sites." (DPOD Section 5.2.3, page 29)

EAO Response:

Detailed construction information such as this is not yet available for the utility corridor, and EAO does not anticipate that it will be available until a construction contractor is selected (following completion of the ROW application/grant process). However, the delivery, storage and dispensing of hazardous materials in the construction area would be in accordance with local, state, and Federal regulations and with the *Spill Prevention, Control, Countermeasure and Reporting Plan* provided as Appendix F in the DPOD.

Data Gap No. 51

"Need corridor construction information on the plan/procedure for profiling solid waste to determine hazardous/nonhazardous status." (DPOD Section 5.2.3, page 29)

EAO Response:

Solid waste in utility corridor construction consists of a broad range of materials that include garbage, refuse, packaging, spent maintenance substances (e.g. used oil, hydraulic fluid, etc.), worn tires, etc. Solid wastes are regulated under different subtitles of the Resource Conservation and Recovery Act (RCRA) and include hazardous and non-hazardous wastes. Appropriate waste materials would first be evaluated for recycle (e.g. used oil, batteries, antifreeze, etc.), then would be disposed of at an eligible off-site licensed facility in accordance with its material definition under RCRA.

Data Gap No. 52

"Need corridor construction information on the anticipated fueling stations or above ground storage tanks for fuel." (DPOD Sections 5.2.2 and 5.2.3, page 29)

EAO Response:

Diesel and gasoline fueling stations for construction equipment would be present along the ROW and would primarily be located at designation temporary laydown and staging areas. The size of above ground storage tanks for fuel are not anticipated to be known until after EAO selects a construction contractor (following completion of the EIS); however, all fuel storage facilities would be in accordance with local, state, and Federal regulations and with the *Spill Prevention, Control, Countermeasure and Reporting Plan* provided as Appendix F in the DPOD.

Data Gap No. 53

"Need corridor construction information on the number, size, and approximate placement of above ground storage tanks, secondary containment sizes and liquid transfer capacities." (DPOD Sections 5.2.2 and 5.2.3, page 29)

EAO Response:

Diesel and gasoline fueling stations for construction equipment would be present along the ROW and would primarily be located at designation temporary laydown and staging areas. The size above ground storage tanks for fuel are not anticipated to be known until after EAO selects a construction contractor (following completion of the EIS); however, all fuel storage facilities would be in accordance with local, state, and Federal regulations and with the *Spill Prevention, Control, Countermeasure and Reporting Plan* provided as Appendix F in the DPOD.

Data Gap No. 54

"Only two potentially eligible sites were identified in the Utility Corridor Project, including the remains of the White River Stage Station. Is there no remaining evidence of the associated stage road in the Project area?" (DPOD Section 9.1.1, page 37)

EAO Response:

The results of the *Class III Cultural Resources Inventory of the Utah Oil Shale Project, in Uintah County, Utah* (SWCA 2013), submitted to the BLM in July 2013, detail the findings and current characterization of the White River Stage Station within the cultural resources inventory area.

Data Gap No. 55

"Please correct White River State Station to read White River Stage Station." (DPOD Section 9.1.1, page 37, bullet point 1)

EAO Response:

The comment is noted; this was a typographical error in the DPOD. However, the site number provided in the DPOD and the full site characterization in the *Class III Cultural Resources Inventory of the Utah Oil Shale Project, in Uintah County, Utah* (SWCA 2013) correctly reference this location as the White River Stage Station. The DPOD will not be reissued to correct the error.

Data Gap No. 56

"Are both of these sites located on lands under the sole jurisdiction of the BLM?" (DPOD Section 9.1.1, page 37, last paragraph)

EAO Response:

Precise locational information of sensitive cultural resources is not available to EAO. Appendices B, C and D of the *Class III Cultural Resources Inventory of the Utah Oil Shale Project, in Uintah County, Utah* (SWCA 2013), which were redacted from the report version provided to EAO but were included in the agency version provided to the BLM in July 2013, contain locational information for each of the cultural resource sites identified in that report.

Data Gap No. 57

"'*. . . EAO would work in consultation with the BLM VFO to determine appropriate mitigation activities to document these sites prior to construction . . .'* Why is the Utah State Historic Preservation Office (SHPO) not included in this consultation? Determination of effects and the identification of appropriate mitigation efforts are the responsibility of the lead federal agency in consultation with the land-management agency and the SHPO. The Project Proponent is not involved in making any form of determination regarding cultural resources or the appropriate treatment thereof." (DPOD Section 9.1.1, page 37, last paragraph)

EAO Response:

Comment noted. EAO acknowledges that determination of effects and the identification of appropriate mitigation efforts are the responsibility of the lead federal agency (BLM) in consultation with the land management agency (in this instance, BLM or SITLA) and the SHPO. The statement was made to indicate

that EAO desires to be an active and willing participant in efforts to avoid, minimize and mitigate cultural resources.

Data Gap No. 58

"'Because of the relatively small area occupied by both of these sites, it is anticipated that the utility corridor could be micro-sited to fully avoid impacts to either.' This statement is misleading, Site 42UN2558 (White River Stage Station) is actually a relatively large site at greater than 1,516 feet east-west by 576 feet north-south." (DPOD Section 9.1.1, page 37, last paragraph)

EAO Response:

Comment noted. However, it is still anticipated that the utility corridor could be micro-sited to fully avoid impacts to either site, upon release of detailed locational information to EAO.

Data Gap No. 59

"The absence of any mention of the Utah SHPO in this section is of concern. The SHPO is a part of the Section 106 review process and must be consulted regarding Project effects and mitigation strategies. Though the lead federal agency is legally responsible for compliance with Section 106, consultation with other cooperating agencies, tribes, and the SHPO is required under the law." (DPOD Section 9.1.1, pages 37-38)

EAO Response:

Comment noted. EAO acknowledges that consultation with the SHPO and compliance with Section 106 of the National Historic Preservation Act is the legal responsibility of the lead federal agency (in this instance, the BLM). Because Section 106 compliance and SHPO consultation is the responsibility of the BLM, and not EAO, the SHPO is not directly mentioned in DPOD Section 9.1.1.

Data Gap No. 60

"Why are vertebrate and plant fossils called out specifically in this section rather than stating something more inclusive (e.g. significant paleontological materials)?" (DPOD Section 9.1.1, page 38, first paragraph)

EAO Response:

The exclusion of other significant paleontological materials beyond vertebrate and plants fossils was unintentional. Vertebrate and plant fossils were those most frequently encountered and identified during the paleontological resource inventory of BLM and School and Institution Trust Lands Administration Lands, and therefore were stated as such in the DPOD, although all significant paleontological materials would be identified during review of the excavated trench and spoils material.

Data Gap No. 61

"How will the 200+ person workforce referenced earlier in the document be educated regarding the relevant federal regulations applicable to cultural and paleontological resource protection? Will there be a formal training provided by Enefit that all workers would be required to attend before beginning work on the Project? How will this process take place and how will this training be documented?" (DPOD Section 9.1.1, page 38, second paragraph, first sentence)

EAO Response:

EAO will provide a formal training program prior to the onset of each construction mobilization for the construction workforce, as well as weekly during construction for newly-arriving workers. Records of attendance, both at the initial training and at subsequent trainings for new hires, will be kept by EAO (and/or the construction contractor) to document compliance with this training commitment. The training will address the Federal and state regulations governing cultural and paleontological resources, as well as the penalties (both legal and company-driven) for failing to comply with said regulations. The training will also provide photographic examples of cultural and paleontological resources that have been previously identified in the region, in order that construction workers will more readily recognize an unanticipated discovery, and the training will provide the proper onsite contact personnel and procedures for notification in the event of an unanticipated discovery. EAO will also consider providing nominal contractual incentives to construction workers that identify unanticipated discoveries in the field during construction.

Data Gap No. 62

"*"In the even[t] unanticipated discovery of cultural or paleontological resources occurs, operations in the immediate area would be suspended . . . "* It is important to define specific buffer requirements for protection of inadvertent discoveries. The *immediate area* is too open to interpretation." (DPOD Section 9.1.1, page 38, second paragraph)

EAO Response:

In the event of an unanticipated discovery of cultural or paleontological resources, measures will be taken to prevent further disturbance. Depending the nature and location of the unanticipated discovery, these measure may include halting construction in the vicinity of the discovery, fencing of the discovery and a 300-foot buffer area to redirect vehicular traffic, or posting a security guard. Discovery of known or suspected human remains at any time or anywhere on the project will result in the immediate cessation of construction at the discovery location and within 300 feet. Archaeological monitors will notify the land management agency (BLM or SITLA) and the SHPO within one working day by telephone and with written follow-up within three working days. The archaeological monitor, in consultation with the BLM and the SHPO, will record the discovery and recommend site eligibility and identify treatment options. Site treatment may include site avoidance, immediate archaeological data recovery, or consideration during the post-construction phase of data recovery.

Data Gap No. 63

"'. . . until written authorization to proceed is issued by the appropriate surface management agency AO' If the BLM is acting as lead federal agency then BLM would be involved in any authorization to proceed issued for the project. Authorization to proceed would be issued in consultation with the land managing agency." (DPOD Section 9.1.1, page 38, second paragraph)

EAO Response:

To the best of EAO's understanding, the BLM does not retain approval authority over activities on non-Federal (i.e. private and/or state) lands. It is anticipated that the BLM would coordinate authorization(s) to proceed with other surface management agency entities in the event of an unanticipated discovery of cultural and/or paleontological resources; however, authorization to proceed on non-Federal lands would not necessarily be vested solely with the BLM.

Data Gap No. 64

"*"Appropriate mitigation measures would be determined by EAO in consultation with the BLM"* Similar to above comment - Determination of appropriate mitigation in the event of an unanticipated discovery is the responsibility of the lead federal agency in consultation with the land-management agency and the SHPO. The Project Proponent is not involved in making any form of determination regarding cultural resources or the appropriate treatment thereof." (DPOD Section 9.1.1, page 38, second paragraph)

EAO Response:

Comment noted.

Data Gap No. 65

"Section 9.1.2 does not reference proposed critical habitat for the beardtongue species. Does proposed critical habitat occur in or in proximity to the proposed ROW corridor or other parts of the project area (or access roads)? If so, are mitigation measures developed for these areas?" (DPOD Section 9.1.2, page 38)

EAO Response:

The DPOD was issued in advance of the United States Fish and Wildlife Service's (USFWS's) withdrawal of the proposed listing and designation of critical habitat for the beardtongue species. On July 22, 2014, the USFWS withdrew the proposed listing and designation of critical habitat for the Graham's and White River beardtongue species under Docket Nos. FWS-R6-ES-2013-0081 and FWS-R6-ES-2013-0082.

Data Gap No. 66

"Please provide a GIS shapefile of the Dragon Road improvement alignment." (DPOD Appendix C)

EAO Response:

The shapefile for the Dragon Road improvement alignment will be transmitted via email to the BLM together with this transmittal.

Data Gap No. 67

"Please provide detail on what sorts of BLM approved herbicides could be considered for use on the ROW." (DPOD Appendix D)

EAO Response:

The BLM 911 Manual states that "only pesticides that have been analyzed through [National Environmental Policy Act] documentation can be used in chemical pest control on BLM lands." The BLM has identified eight BLM-approved active ingredients based on the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact State (PEIS) Record of Decision (ROD)* analysis. While specific herbicides have not yet been identified by EAO, EAO would comply with the BLM policy on herbicide use. It is anticipated that herbicides would focus on typical road-side weeds already present in the region and may include such standard active ingredients as glyphosate (e.g. Round-Up PRO), 2,4-D (e.g. Wedar 64), and imazapyr (e.g. Arsenal).

Data Gap No. 68

"What is the data source of the "future power corridor" data layer shown on the map? Is this part of Enefit's proposal?" (DPOD Appendix G)

EAO Response:

The "future power corridor" shown on the map in Appendix G of the DPOD was originally provided by Moon Lake Electric Cooperative to EAO as a conceptual route for transmission lines servicing both the South Project and the relic White River Mine. That power corridor route was considered in the routing for the current proposal, however, it is not part of EAO's proposal. The transmission line routing shown in Appendix B of the DPOD is EAO's proposed transmission line, subject to minor revision based on further utility corridor engineering and fieldwork to be conducted by EAO following the BLM scope of analysis review and evaluation of outstanding data.

Annex 1. Construction Emissions Summary

Construction Emission Estimates

The contents of Annex 1 include the methodology used to estimate construction emissions and a summary of the construction emission calculations (Tables A1-1 through A1-16).

Methodology and Inputs

The proposed construction schedule for the utility corridor project utilizes a two-phase mobilization, whereby the water supply pipeline and first transmission line from the Bonanza Power Plant to the South Project (as well as the Dragon Road improvement) would be constructed during the first mobilization, while the natural gas and product pipelines, second transmission line, and switchyard would be constructed during the second mobilization. To evaluate the emissions expected to occur during the construction period, emission sources and rates were calculated for each mobilization. Construction emissions, including diesel exhaust emissions from construction equipment, commuter and delivery truck exhaust emissions, and fugitive dust emissions, would be generated during clearing and grading, excavation, pipeline and transmission line installation, and reclamation of the utility corridor. Construction emissions were estimated for the following sources:

- Onsite construction equipment and offsite (i.e. commuter vehicle and delivery truck) engine exhaust; and
- Fugitive PM_{10} from clearing and grading, excavation, vehicle travel on unpaved construction site areas, and storage pile wind erosion.

Construction during the first mobilization is anticipated to last up to 12 months, while construction during the second mobilization is anticipated to last up to 18 months. The construction schedule for both mobilizations is based on one 10-hour shift per day, six days a week, and four weeks per month (i.e. 24 construction days per month). A summary of the equipment and motor vehicle requirements for construction of the various utility corridor elements is provided in Tables A1-1 and A1-2. Note that construction emissions for the Dragon Road improvement are not included in these calculations, as the required equipment for that upgrade has not yet been chosen; however, because of the improvement from an existing unpaved road to a paved surface, it is anticipated that construction exhaust emissions would be a negligible increase beyond the utility corridor construction. Long-term fugitive dust emissions would be a significant reduction over the Dragon Road current condition, as the proposed road would be a Class 1-B Paved road.

Table A1-1. Construction equipment count, first construction mobilization.

First Mobilization												
Month	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Equipment Piece	Number of Equipment Pieces											
30" Water Line												
Rock Trenchers	3	3	3	0	0	0	0	0	0	0	0	0
Side Boom Trackers	12	12	12	0	0	0	0	0	0	0	0	0
Rock Crusher - Track	3	3	3	0	0	0	0	0	0	0	0	0
Portable Compaction Rollers	3	3	3	0	0	0	0	0	0	0	0	0
Bulldozers	3	3	3	0	0	0	0	0	0	0	0	0
Motor Graders	3	3	3	0	0	0	0	0	0	0	0	0
HDPE Fusion Machines	3	3	3	0	0	0	0	0	0	0	0	0
Trucks - Pickup 3/4 ton	12	12	12	0	0	0	0	0	0	0	0	0
Service Truck	3	3	3	0	0	0	0	0	0	0	0	0
Crane Mobile - 50 ton	3	3	3	0	0	0	0	0	0	0	0	0
Concrete Trucks	2	2	2	0	0	0	0	0	0	0	0	0
Water Trucks	1	1	1	0	0	0	0	0	0	0	0	0
Transmission Line & Substation												
Pole Drilling Machine	1	1	1	1	1	1	1	1	1	1	1	0
Line Trucks	2	2	2	2	2	2	2	2	2	2	2	0
Trucks - Pickup 3/4 ton	4	4	4	4	4	4	4	4	4	4	4	0
Crane Mobile - 50 ton	1	1	1	1	2	2	2	2	2	2	2	0
Cable Pulling & Tension Trucks/ Trailers	0	0	0	0	0	8	8	8	8	8	8	0
Motor Grader	1	1	1	1	1	1	1	1	1	1	1	0
Backhoe	1	1	1	1	1	0	0	0	0	0	1	0
Ditch Witch	0	0	1	1	1	1	1	0	0	0	0	0
Forklift - Rough Terrain	1	1	1	1	1	1	1	1	1	1	1	0
Bucket Truck	0	0	0	0	2	2	2	2	2	2	2	0
Water Trucks	1	1	1	1	1	1	1	1	1	1	1	0

Table A1-2. Construction equipment count, second construction mobilization.

Second Mobilization																		
Month	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*
Equipment Piece	Number of Equipment Pieces																	
Natural Gas & Product Pipelines																		
Rock Trenchers	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	0
Side Boom Trackers	4	4	4	4	4	4	4	8	8	8	4	4	4	4	4	4	4	0
Rock Crusher - Track	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	0
Portable Compaction Rollers	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	0
Bulldozers	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	0
Motor Graders	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	0
Trucks - Pickup 3/4 ton	4	4	4	4	4	4	4	8	8	8	4	4	4	4	4	4	4	0
Service Truck	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	0
Crane Mobile - 50 ton	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	0
Concrete Trucks	2	2	2	2	2	2	2	4	4	4	2	2	2	2	2	2	2	0
Welding Machines	4	4	4	4	4	4	4	8	8	8	4	4	4	4	4	4	4	0
Water Trucks	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Transmission Line																		
Pole Drilling Machine	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Line Trucks	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0
Trucks - Pickup 3/4 ton	4	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0
Crane Mobile - 50 ton	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Cable Pulling & Tension Trucks/ Trailers	0	0	0	0	8	8	8	8	8	0	0	0	0	0	0	0	0	0
Motor Grader	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Water Trucks	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Switchyard																		
Backhoe	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Ditch Witch	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Trucks - Pickup 3/4 ton	4	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0
Crane Mobile - 50 ton	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Forklift - Rough Terrain	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Bucket Truck	0	0	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0
Water Trucks	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0

Construction emissions were based on the methodologies contained in the South Coast Air Quality Management District's (SCAQMD) California Environmental Quality Act (CEQA) handbook and the United States Environmental Protection Agency's (EPA) AP-42 guidance. The emission factors drawn from the SCAQMD CEQA handbook and used for construction equipment emission calculations are provided in Table A1-3. The emission factors drawn from EPA AP-42 for fugitive dust emissions are provided in Table A1-4. Emission factors for commuter vehicles and delivery trucks were drawn from EPA's AP-42 and the California Air Resources Board's EMFAC2011 model for estimating emission rates and emissions from on-road motor vehicles and are provided in Table A1-5.

Table A1-3. Construction equipment emission factors.

Equipment Piece	Emissions Rate					
	CO (lbs/hr)	*VOC (lbs/hr)*	*NOx (lbs/hr)*	*SOx (lbs/hr)*	*PM_{10} (lbs/hr)*	*CO2 (lbs/hr)*
Rock Trenchers	0.447941605	0.120004904	0.571915634	0.000696049	0.045335748	58.71463591
Side Boom Trackers	0.554932968	0.133467867	0.931457148	0.001258161	0.054579512	114.0187826
Rock Crusher - Track	0.706660911	0.180337775	1.410750683	0.001671478	0.066950037	151.4197084
Portable Compaction Rollers	0.394424376	0.079202756	0.527331696	0.000769656	0.035330839	67.04829751
Bulldozers	0.905309705	0.238279176	1.9017481	0.002687098	0.078306974	262.4899691
Motor Graders	0.588306048	0.119694145	0.886615913	0.001496073	0.044113861	132.7429832
HDPE Fusion Machines	0.360219441	0.071980832	0.567983396	0.00126687	0.023372031	122.5628872
Trucks - Pickup 3/4 ton	0.755183253	0.116357934	0.764735762	0.001407452	0.04173505	125.0877407
Service Truck	0.365121934	0.117922207	0.867814643	0.001873922	0.029041712	166.5454156
Crane Mobile - 50 ton	0.426323671	0.113683785	0.938701304	0.00137682	0.038784881	128.6292291
Concrete Trucks	0.041773237	0.008770447	0.054201418	0.000108622	0.002291172	7.248147633
Pole Drilling Machine	0.501640072	0.062251805	0.533977844	0.001746307	0.01596213	164.9092801
Line Trucks	0.180009496	0.039702132	0.248160888	0.000399208	0.015000193	34.72170028
Cable Pulling & Tension Trucks/ Trailers	0.180009496	0.039702132	0.248160888	0.000399208	0.015000193	34.72170028
Backhoe	0.521263655	0.098789824	0.660265215	0.001315379	0.03323689	119.5800214
Ditch Witch	0.218438312	0.030483522	0.20436758	0.000374756	0.010576408	30.27701859
Forklift - Rough Terrain	0.454861089	0.077532046	0.510399274	0.000816065	0.037200933	70.28077899
Bucket Truck	0.180009496	0.039702132	0.248160888	0.000399208	0.015000193	34.72170028
Welding Machines	0.195053956	0.048237315	0.21733652	0.000317464	0.016815272	25.60268107
Water Trucks	0.347352074	0.044222578	0.202142536	0.001266299	0.006859587	122.5051318

Offroad mobile source emissions factors from SCAQMD, scenario year 2016. Assumed composite category where applicable, as detailed equipment specifications. Trucks - Pickup 3/4 ton assumed as 175 hp category. Service Truck assumed as 250 hp category.

Table A1-4. Fugitive dust emission factors.

Emission Factors		
Emission Factor (Total Suspended Particulates)	Emission Factor (PM_{10})	Emission Factor ($PM_{2.5}$)
5.3728641911	1.5425460000	0.1665587899

Table A1-5. On-road vehicle emission factors.

Vehicle Type	Emission Factor (grams/mile)					
	CO	VOC	SOx	NOx	PM_{10}	CO2
Commuter Vehicle	0.65	0.14	0.01	4.8	0.72	372
Delivery Truck	1.32	0.21	0.02	7.27	0.28	550
Main commute is on-road via Highway 45, so 55 mph rate was used for both.						
PM emissions include vehicle exhaust, tire wear, break wear, and paved road dust. Road dust emissions factors from USEPA AP-42.						
Commuter vehicle assumed as medium duty truck, delivery truck as heavy duty truck. Emissions factors from EMFAC2011 except PM.						
Pounds per gram conversion factor = 0.0022046 lbs per gram						

Emissions Calculations

Emissions were calculated for construction vehicle equipment and for on-road commuter vehicles. Construction vehicle equipment numbers were calculated in total unit months (Table A1-6), total days of operation (Table A1-7), and peak simultaneous operating numbers (Table A1-8; although peak numbers were not used for emission calculations and are provided for informational purposes only). Commuter and delivery vehicle trip numbers were also calculated (Table A1-9). The emission factors provided above were used to convert to pounds per day (lbs/day) of construction emissions (Tables A1-10 and A1-11) and on-road vehicle emissions (Table A1-9) and, combined with the total days of operation, to calculate the total estimated emissions for the Utility Corridor project construction phases (Tables A1-12, A1-13 and A1-14).

In addition to construction and commuter vehicle emissions, fugitive dust emissions from clearing, grading excavation of the ROW were also calculated using the guidance provided in AP-42 and are provided in Tables A1-15 and A1-16.

Table A1-6. Construction equipment total unit months.

Equipment Piece	Total Unit Months	
	First Mobilization	*Second Mobilization*
Rock Trenchers	9	20
Side Boom Trackers	36	80
Rock Crusher - Track	9	20
Portable Compaction Rollers	9	20
Bulldozers	9	20
Motor Graders	20	29
HDPE Fusion Machines	9	0
Trucks - Pickup 3/4 ton	80	152
Service Truck	9	20
Crane Mobile - 50 ton	27	36
Concrete Trucks	6	40
Pole Drilling Machine	11	9
Line Trucks	22	18
Cable Pulling & Tension Trucks/ Trailers	48	40
Backhoe	6	5
Ditch Witch	5	5
Forklift - Rough Terrain	11	9
Bucket Truck	14	14
Welding Machines	0	80
Water Trucks	14	35

Table A1-7. Construction equipment total days of operation.

Equipment Piece	Total Days of Operation	
	First Mobilization	*Second Mobilization*
Rock Trenchers	216	480
Side Boom Trackers	864	1920
Rock Crusher - Track	216	480
Portable Compaction Rollers	216	480
Bulldozers	216	480
Motor Graders	480	696
HDPE Fusion Machines	216	0
Trucks - Pickup 3/4 ton	1920	3648
Service Truck	216	480
Crane Mobile - 50 ton	648	864
Concrete Trucks	144	960
Pole Drilling Machine	264	216
Line Trucks	528	432
Cable Pulling & Tension Trucks/ Trailers	1152	960
Backhoe	144	120
Ditch Witch	120	120
Forklift - Rough Terrain	264	216
Bucket Truck	336	336
Welding Machines	0	1920
Water Trucks	5.88	14.7

Water trucks only operate 4.2 hours per day, so Total Days of Operation calculated as Total Unit Months * (4.2/10).

Table A1-8. Construction equipment peak operating numbers.

Equipment Piece	Peak Number	
	First Mobilization	*Second Mobilization*
Rock Trenchers	3	2
Side Boom Trackers	12	8
Rock Crusher - Track	3	2
Portable Compaction Rollers	3	2
Bulldozers	3	2
Motor Graders	3	2
HDPE Fusion Machines	3	0
Trucks - Pickup 3/4 ton	12	8
Service Truck	3	2
Crane Mobile - 50 ton	3	2
Concrete Trucks	2	4
Pole Drilling Machine	1	1
Line Trucks	2	2
Cable Pulling & Tension Trucks/ Trailers	8	8
Backhoe	1	1
Ditch Witch	1	1
Forklift - Rough Terrain	1	1
Bucket Truck	2	1
Welding Machines	0	4
Water Trucks	1	1

Table A1-9. Commuter and delivery vehicle daily emissions.

Construction Activity	Number per Day		Miles per Day		Construction Commuter Emissions (lbs/day)						Delivery/Haul Truck Emissions (lbs/day)					
	Construction Commuter[a]	Delivery/ Haul Truck	Construction Commuter	Delivery/ Haul Truck	CO	VOC	SOx	NOx	PM_{10}	CO2	CO	VOC	SOx	NOx	PM_{10}	CO2
30" Water Line	35	5	40	40	2.006186	0.4321016	0.0308644	14.814912	2.2222368	1148.15568	0.5820144	0.0925932	0.0088184	3.2054884	0.3174624	242.506
Transmission Line No. 1 & Substation	50	7	40	40	2.86598	0.617288	0.044092	21.16416	3.174624	1640.2224	0.81482016	0.12963048	0.01234576	4.48768376	0.17284064	339.5084
Natural Gas and Product Pipelines	50	7	40	40	2.86598	0.617288	0.044092	21.16416	3.174624	1640.2224	0.81482016	0.12963048	0.01234576	4.48768376	0.17284064	339.5084
Transmission Line No. 2	50	7	40	40	2.86598	0.617288	0.044092	21.16416	3.174624	1640.2224	0.81482016	0.12963048	0.01234576	4.48768376	0.17284064	339.5084
Switchyard	10	2	40	40	0.573196	0.1234576	0.0088184	4.232832	0.6349248	328.04448	0.23280576	0.03703728	0.00352736	1.28219536	0.04938304	97.0024

[a] Conservatively assumes maximum number of commuters for each construction activity. Number of construction workers from Fluor PFS.

Table A1-10. Construction daily emissions, first mobilization.

Equipment Piece	Emissions Rate - First Mobilization					
	CO (lbs/day)	*VOC (lbs/day)*	*NOx (lbs/day)*	*SOx (lbs/day)*	*PM_{10} (lbs/day)*	*CO2 (lbs/day)*
Rock Trenchers	13.43824815	3.600147114	17.15746903	0.020881481	1.360072452	1761.439077
Side Boom Trackers	66.5919561	16.01614399	111.7748578	0.150979273	6.549541483	13682.25391
Rock Crusher - Track	21.19982733	5.410133262	42.32252048	0.050144351	2.008501125	4542.591252
Portable Compaction Rollers	11.83273127	2.376082692	15.81995087	0.023089693	1.059925178	2011.448925
Bulldozers	27.15929116	7.148375288	57.05244299	0.080612951	2.349209218	7874.699074
Motor Graders	17.64918144	3.590824336	26.59847738	0.044882182	1.323415841	3982.289496
HDPE Fusion Machines	10.80658323	2.159424961	17.03950187	0.038006107	0.701160921	3676.886617
Trucks - Pickup 3/4 ton	90.62199033	13.96295211	91.76829147	0.168894195	5.008205993	15010.52889
Service Truck	10.95365801	3.537666222	26.03443928	0.056217652	0.871251369	4996.362469
Crane Mobile - 50 ton	12.78971014	3.410513549	28.16103912	0.041304608	1.163546423	3858.876874
Concrete Trucks	0.835464746	0.175408935	1.084028364	0.002172448	0.045823435	144.9629527
Pole Drilling Machine	5.016400724	0.622518054	5.339778436	0.01746307	0.159621299	1649.092801
Line Trucks	3.60018991	0.794042642	4.96321776	0.007984156	0.300003863	694.4340057
Cable Pulling & Tension Trucks/ Trailers	14.40075964	3.176170567	19.85287104	0.031936626	1.200015454	2777.736023
Backhoe	5.212636552	0.987898237	6.602652148	0.013153793	0.332368904	1195.800214
Ditch Witch	2.18438312	0.304835224	2.043675797	0.003747556	0.105764081	302.7701859
Forklift - Rough Terrain	4.548610887	0.775320456	5.103992739	0.008160648	0.372009333	702.8077899
Bucket Truck	3.60018991	0.794042642	4.96321776	0.007984156	0.300003863	694.4340057
Welding Machines	0	0	0	0	0	0
Water Trucks	3.473520739	0.442225778	2.021425357	0.012662988	0.068595871	1225.051318
Total Construction Equipment (lbs/day)[a]	**325.9153334**	**69.28472606**	**485.7038497**	**0.780277935**	**25.27903611**	**70784.46588**
Total Motor Vehicles (lbs/day)[b]	**6.26900056**	**1.27161328**	**0.09612056**	**43.67224416**	**5.88716384**	**3370.39248**
Combined Total (lbs/day)	**332.184334**	**70.55633934**	**485.7999702**	**44.45252209**	**31.16619995**	**74154.85836**
Combined Total (tons/day)	**0.166092167**	**0.03527817**	**0.242899985**	**0.022226261**	**0.0155831**	**37.07742918**

[a] Assumes construction equipment operates 10 hours per day.

[b] Represents the maximum combined (commute plus delivery truck) vehicle emissions.

Table A1-11. Construction daily emissions, second mobilization.

Equipment Piece	Emissions Rate - Second Mobilization					
	CO (lbs/day)	*VOC (lbs/day)*	*NOx (lbs/day)*	*SOx (lbs/day)*	*PM_{10} (lbs/day)*	*CO2 (lbs/day)*
Rock Trenchers	8.958832097	2.400098076	11.43831269	0.013920987	0.906714968	1174.292718
Side Boom Trackers	44.3946374	10.67742933	74.51657187	0.100652849	4.366360988	9121.502609
Rock Crusher - Track	14.13321822	3.606755508	28.21501366	0.033429568	1.33900075	3028.394168
Portable Compaction Rollers	7.888487514	1.584055128	10.54663391	0.015393129	0.706616785	1340.96595
Bulldozers	18.10619411	4.765583525	38.03496199	0.053741967	1.566139478	5249.799382
Motor Graders	11.76612096	2.393882891	17.73231825	0.029921454	0.882277228	2654.859664
HDPE Fusion Machines	0	0	0	0	0	0
Trucks - Pickup 3/4 ton	60.41466022	9.308634742	61.17886098	0.11259613	3.338803996	10007.01926
Service Truck	7.30243867	2.358444148	17.35629286	0.037478435	0.580834246	3330.908312
Crane Mobile - 50 ton	8.52647343	2.273675699	18.77402608	0.027536405	0.775697616	2572.584582
Concrete Trucks	1.670929492	0.35081787	2.168056728	0.004344895	0.09164687	289.9259053
Pole Drilling Machine	5.016400724	0.622518054	5.339778436	0.01746307	0.159621299	1649.092801
Line Trucks	3.60018991	0.794042642	4.96321776	0.007984156	0.300003863	694.4340057
Cable Pulling & Tension Trucks/ Trailers	14.40075964	3.176170567	19.85287104	0.031936626	1.200015454	2777.736023
Backhoe	5.212636552	0.987898237	6.602652148	0.013153793	0.332368904	1195.800214
Ditch Witch	2.18438312	0.304835224	2.043675797	0.003747556	0.105764081	302.7701859
Forklift - Rough Terrain	4.548610887	0.775320456	5.103992739	0.008160648	0.372009333	702.8077899
Bucket Truck	1.800094955	0.397021321	2.48160888	0.003992078	0.150001932	347.2170028
Welding Machines	7.802158231	1.9294926	8.693460795	0.012698578	0.672610893	1024.107243
Water Trucks	3.473520739	0.442225778	2.021425357	0.012662988	0.068595871	1225.051318
Total Construction Equipment (lbs/day)[a]	**231.2007469**	**49.14890179**	**337.063732**	**0.540815313**	**17.91508455**	**48689.26913**
Total Motor Vehicles (lbs/day)[b]	**8.16760208**	**1.65433184**	**0.12522128**	**56.81871488**	**7.37923712**	**4384.50848**
Combined Total (lbs/day)	**239.368349**	**50.80323363**	**337.1889532**	**57.35953019**	**25.29432167**	**53073.77761**
Combined Total (tons/day)	**0.119684174**	**0.025401617**	**0.168594477**	**0.028679765**	**0.012647161**	**26.53688881**

[a] Assumes construction equipment operates 10 hours per day.

[b] Represents the maximum combined (commute plus delivery truck) vehicle emissions.

Table A1-12. Total on-road vehicle emissions.

Construction Activity	Total Trip Number		Total Miles		Construction Commuter Emissions (lbs)						Delivery/Haul Truck Emissions (lbs/day)					
	Construction Commuter[a]	Delivery/ Haul Truck	Construction Commuter	Delivery/ Haul Truck	CO	VOC	SOx	NOx	PM_{10}	CO2	CO	VOC	SOx	NOx	PM_{10}	CO2
30" Water Line	10080	1440	403200	57600	577.781568	124.4452608	8.8889472	4266.694656	640.0041984	330668.8358	167.6201472	26.6668416	2.5396992	923.1806592	91.4291712	69841.728
Transmission Line No. 1 & Substation	14400	2016	576000	80640	825.40224	177.778944	12.698496	6095.27808	914.291712	472384.0512	234.6682061	37.33357824	3.55557888	1292.452923	49.77810432	97778.4192
Natural Gas and Product Pipelines	14400	2016	576000	80640	825.40224	177.778944	12.698496	6095.27808	914.291712	472384.0512	234.6682061	37.33357824	3.55557888	1292.452923	49.77810432	97778.4192
Transmission Line No. 2	14400	2016	576000	80640	825.40224	177.778944	12.698496	6095.27808	914.291712	472384.0512	234.6682061	37.33357824	3.55557888	1292.452923	49.77810432	97778.4192
Switchyard	2880	576	115200	23040	165.080448	35.5557888	2.5396992	1219.055616	182.8583424	94476.81024	67.04805888	10.66673664	1.01587968	369.2722637	14.22231552	27936.6912

[a] Conservatively assumes maximum number of commuters for each construction activity.

Table A1-13. Total construction emissions, first mobilization.

Equipment Piece	Total Emissions - First Mobilization					
	CO (lbs)	*VOC (lbs)*	*NOx (lbs)*	*SOx (lbs)*	*PM_{10} (lbs)*	*CO2 (lbs)*
Rock Trenchers	2902.661599	777.6317767	3706.01331	4.510399808	293.7756496	380470.8407
Side Boom Trackers	57535.45007	13837.94841	96573.47714	130.446092	5658.803841	11821467.38
Rock Crusher - Track	4579.162703	1168.588785	9141.664425	10.83117991	433.8362429	981199.7104
Portable Compaction Rollers	2555.869954	513.2338614	3417.109388	4.987373683	228.9438384	434472.9678
Bulldozers	5866.406891	1544.049062	12323.32769	17.41239738	507.429191	1700935
Motor Graders	8471.607092	1723.595681	12767.26914	21.54344718	635.2396038	1911498.958
HDPE Fusion Machines	2334.221979	466.4357915	3680.532403	8.209319109	151.450759	794207.5093
Trucks - Pickup 3/4 ton	173994.2214	26808.86806	176195.1196	324.2768552	9615.755507	28820215.46
Service Truck	2365.990129	764.1359039	5623.438885	12.14301294	188.1902957	1079214.293
Crane Mobile - 50 ton	8287.732174	2210.01278	18248.35335	26.76538582	753.9780823	2500552.214
Concrete Trucks	120.3069234	25.25888661	156.1000844	0.31283245	6.598574648	20874.66518
Pole Drilling Machine	1324.329791	164.3447664	1409.701507	4.610250512	42.14002282	435360.4996
Line Trucks	1900.900273	419.2545149	2620.578977	4.215634629	158.4020399	366661.155
Cable Pulling & Tension Trucks/ Trailers	16589.67511	3658.948494	22870.50744	36.79099313	1382.417803	3199951.898
Backhoe	750.6196636	142.2573462	950.7819092	1.894146138	47.86112216	172195.2309
Ditch Witch	262.1259744	36.58022693	245.2410956	0.449706726	12.69168969	36332.42231
Forklift - Rough Terrain	1200.833274	204.6846005	1347.454083	2.154411053	98.21046381	185541.2565
Bucket Truck	1209.66381	266.7983277	1667.641167	2.682676582	100.8012981	233329.8259
Welding Machines	0	0	0	0	0	0
Water Trucks	20.42430195	2.600287575	11.8859811	0.074458372	0.40334372	7203.301749
Total Construction Equipment (lbs)[a]	**292272.2031**	**54735.22755**	**372956.1976**	**614.3105726**	**20316.92937**	**55081684.59**
Total Motor Vehicles (lbs)[b]	**1805.472161**	**366.2246246**	**27.68272128**	**12577.60632**	**1695.503186**	**970673.0342**
Combined Total (lbs)	**294077.6753**	**55101.45218**	**372983.8803**	**13191.91689**	**22012.43255**	**56052357.62**
Combined Total (tons)	**147.0388377**	**27.55072609**	**186.4919402**	**6.595958445**	**11.00621628**	**28026.17881**

[a] Assumes construction equipment operates 10 hours per day.

[b] Represents the maximum combined (commute plus delivery truck) vehicle emissions.

Table A1-14. Total construction emissions, second mobilization.

Equipment Piece	Total Emissions - Second Mobilization					
	CO (lbs)	*VOC (lbs)*	*NOx (lbs)*	*SOx (lbs)*	*PM_{10} (lbs)*	*CO2 (lbs)*
Rock Trenchers	4300.239407	1152.047077	5490.390089	6.68207379	435.2231846	563660.5047
Side Boom Trackers	85237.70381	20500.6643	143071.818	193.2534696	8383.413098	17513285.01
Rock Crusher - Track	6783.944745	1731.242644	13543.20655	16.04619246	642.7203599	1453629.201
Portable Compaction Rollers	3786.474007	760.3464614	5062.384278	7.388701752	339.1760569	643663.6561
Bulldozers	8690.973172	2287.480092	18256.78176	25.79614427	751.7469497	2519903.704
Motor Graders	8189.220189	1666.142492	12341.6935	20.82533227	614.0649504	1847782.326
HDPE Fusion Machines	0	0	0	0	0	0
Trucks - Pickup 3/4 ton	220392.6805	33957.89954	223180.4849	410.7506832	12179.95698	36505606.25
Service Truck	3505.170562	1132.053191	8331.020571	17.9896488	278.800438	1598835.99
Crane Mobile - 50 ton	7366.873043	1964.455804	16220.75854	23.79145406	670.2027399	2222713.079
Concrete Trucks	1604.092312	336.7851549	2081.334458	4.171099329	87.9809953	278328.8691
Pole Drilling Machine	1083.542556	134.4638998	1153.392142	3.772023146	34.47820049	356204.0451
Line Trucks	1555.282041	343.0264213	2144.110072	3.449155606	129.601669	299995.4905
Cable Pulling & Tension Trucks/ Trailers	13824.72926	3049.123745	19058.7562	30.65916094	1152.014836	2666626.582
Backhoe	625.5163863	118.5477885	792.3182577	1.578455115	39.88426847	143496.0257
Ditch Witch	262.1259744	36.58022693	245.2410956	0.449706726	12.69168969	36332.42231
Forklift - Rough Terrain	982.4999516	167.4692186	1102.462432	1.762699952	80.35401585	151806.4826
Bucket Truck	604.8319049	133.3991638	833.8205836	1.341338291	50.40064906	116664.913
Welding Machines	14980.1438	3704.625792	16691.44473	24.38126893	1291.412914	1966285.906
Water Trucks	51.06075487	6.500718936	29.71495275	0.18614593	1.008359301	18008.25437
Total Construction Equipment (lbs)a	**383827.1044**	**73182.85373**	**489631.133**	**794.2747542**	**27175.13235**	**70902828.71**
Total Motor Vehicles (lbs)b	**2352.269399**	**476.4475699**	**36.06372864**	**16363.78989**	**2125.220291**	**1262738.442**
Combined Total (lbs)	**386179.3738**	**73659.3013**	**489667.1968**	**17158.06464**	**29300.35264**	**72165567.15**
Combined Total (tons)	**193.0896869**	**36.82965065**	**244.8335984**	**8.57903232**	**14.65017632**	**36082.78358**

[a] Assumes construction equipment operates 10 hours per day.

[b] Represents the maximum combined (commute plus delivery truck) vehicle emissions.

Table A1-15. Fugitive dust emissions, first mobilization.

Fugitive Dust Emissions - First Mobilization										
Activity	Acres	Amount	Units	Emission Factor Units	Emission Factor (TSP)	Emission Factor (PM_{10})	Emission Factor ($PM_{2.5}$)	TSP Emissions (tons)	PM_{10} Emissions (tons)	$PM_{2.5}$ Emissions (tons)
Grading Equipment Pass	637.89	438.549375	VMT	lb/VMT	5.372864191	1.542546	0.16655879	1.17813	0.33824	0.03652
							Total	***1.17813***	***0.33824***	***0.03652***

TSP - Total Suspended Particulate

Fugitive dust emissions factors taken from AP-42 (USEPA 1998).

Table A1-16. Fugitive dust emissions, second mobilization.

Fugitive Dust Emissions - Second Mobilization										
Activity	Acres	Amount	Units	Emission Factor Units	Emission Factor (TSP)	Emission Factor (PM_{10})	Emission Factor ($PM_{2.5}$)	TSP Emissions (tons)	PM_{10} Emissions (tons)	$PM_{2.5}$ Emissions (tons)
Grading Equipment Pass	457.24	314.3525	VMT	lb/VMT	5.372864191	1.542546	0.16655879	0.84449	0.24245	0.02618
							Total	***0.84449***	***0.24245***	***0.02618***

TSP - Total Suspended Particulate

Fugitive dust emissions factors taken from AP-42 (USEPA 1998).

Annex 2. Traffic and Transportation Report