

Table OP-2 Acreage of Expected Disturbance, Vegetation Type, Topsoil Salvage (Page 1 of 2)

| Facility ⁽¹⁾ | Term of Disturbance ⁽²⁾ | Total Disturbance (acres) | Area of Disturbance (acres) | | Area within Disturbance from which Topsoil to be Removed (acres) | | Topsoil Salvage ⁽³⁾ (cubic yards) | Comment |
|--|------------------------------------|---------------------------|-----------------------------|-----------------------|--|-----------------------|--|--|
| | | | Upland Big Sagebrush | Lowland Big Sagebrush | Upland Big Sagebrush | Lowland Big Sagebrush | | |
| PLANT | LT | 8.80 | 3.70 | 5.10 | 3.70 | 5.10 | 28,366 | Map area is 12.5 acres (5.3 acres of Lowland & 7.2 acres of Upland Big Sagebrush); however, only about 70% (8.8 acres) will have vegetation removed & topsoil stripped. As a conservative estimate, all of the Lowland Big Sagebrush was included in the disturbance (Figure D8-1). Topsoil stockpile in the NE portion of the Plant site. |
| STAGING AREAS | | | | | | | | |
| Permanent | LT | 1.50 | 1.50 | 0.00 | 1.50 | 0.00 | 4,835 | Permanent staging area is in Upland Big Sagebrush. Topsoil stockpile NE of the area. Potential staging areas, if needed, will be similarly located. |
| Potential | ST | 1.50 | 1.50 | 0.00 | 1.50 | 0.00 | 4,835 | |
| Potential | ST | 1.50 | 1.50 | 0.00 | 1.50 | 0.00 | 4,835 | |
| TOTAL - STAGING AREAS | | 4.50 | 4.50 | 0.00 | 4.50 | 0.00 | 14,505 | |
| DEEP WELLS | | | | | | | | |
| Drilling pad and mud pits | ST | 15.00 | 11.57 | 3.43 | 11.57 | 3.43 | 48,352 | Topsoil stockpiles adjacent to pads. ⁽⁴⁾ |
| Well House | LT | 5.00 | 5.00 | 0.00 | 5.00 | 0.00 | 16,117 | Topsoil stockpiles adjacent to well houses. ⁽⁴⁾ |
| TOTAL - DEEP WELLS | | 20.00 | 16.57 | 3.43 | 16.57 | 3.43 | 64,469 | |
| PIPELINES (outside patterns) ⁽⁵⁾ | | | | | | | | |
| Trunkline | ST | 11.13 | 10.04 | 1.09 | 10.04 | 1.09 | 35,877 | Trunkline includes pipeline along Access Road and to Plant. Along all pipelines, topsoil will be wind-rowed adjacent to pipelines (separate from deeper material). |
| Pipelines to Deep Wells | ST | 4.07 | 3.46 | 0.61 | 3.46 | 0.61 | 13,119 | |
| Mine Unit 1 | ST | 1.32 | 0.99 | 0.33 | 0.99 | 0.33 | 4,255 | |
| Mine Unit 2 | ST | 1.39 | 1.27 | 0.12 | 1.27 | 0.12 | 4,481 | |
| Mine Unit 3 | ST | 0.89 | 0.81 | 0.08 | 0.81 | 0.08 | 2,869 | |
| TOTAL - PIPELINES | | 18.80 | 16.57 | 2.23 | 16.57 | 2.23 | 60,601 | |
| DRILL PADS (outside patterns) ⁽⁶⁾ | | | | | | | | |
| Exploration Holes | ST | 11.75 | 9.09 | 2.66 | 9.09 | 2.66 | 37,875 | On the order of 470 exploration holes are planned. As a conservative estimate, the highest proportion of Lowland to Upland acreage in a mine unit (Mine Unit 1) was used to estimate the proportion for the exploration holes. |
| Monitoring Wells (mostly monitor well ring - Figure OP-6a) | | | | | | | | |
| Mine Unit 1 | ST | 0.70 | 0.55 | 0.15 | 0.55 | 0.15 | 2,256 | The estimated number of monitor wells for Mine Units 2 and 3 is based on the number for Mine Unit 1. |
| Mine Unit 2 | ST | 0.88 | 0.69 | 0.19 | 0.69 | 0.19 | 2,837 | |
| Mine Unit 3 | ST | 0.83 | 0.65 | 0.18 | 0.65 | 0.18 | 2,675 | |
| TOTAL - DRILL PADS | | 14.16 | 10.98 | 3.18 | 10.98 | 3.18 | 45,644 | |
| ROADS ⁽⁷⁾ | | | | | | | | |
| Access Road within main Permit Area | LT | 17.17 | 15.07 | 2.10 | 15.07 | 2.10 | 55,346 | Topsoil will be stockpiled at intervals adjacent to the roads. |
| Access Road east & west of main Permit Area | LT | 19.13 | 16.79 | 2.34 | 16.79 | 2.34 | 61,664 | Topsoil will be stockpiled at intervals adjacent to the roads. |
| Secondary Roads | | | | | | | | |
| Roads to Deep Wells | LT | 8.96 | 7.98 | 0.98 | 7.98 | 0.98 | 28,882 | Topsoil stockpile for road to each well will be near the well house for that well. |
| Mine Unit 1 | LT | 0.34 | 0.34 | 0 | 0.34 | 0 | 1,096 | Topsoil will be stockpiled at intervals adjacent to the roads. |
| Mine Unit 2 | LT | 0.89 | 0.89 | 0 | 0.89 | 0 | 2,869 | |
| Mine Unit 3 | LT | 0 | 0 | 0 | 0 | 0 | 0 | Mine Unit 1 and Mine Unit 3 share the secondary road outside the pattern area. |
| Total for Secondary Roads | | 10.19 | 9.21 | 0.98 | 9.21 | 0.98 | 32,847 | |
| Two-Track Roads | | | | | | | | |
| Mine Unit 1 | LT | 2.78 | 2.28 | 0.5 | 2.28 | 0.5 | 8,961 | |
| Mine Unit 2 | LT | 3.57 | 2.94 | 0.63 | 2.94 | 0.63 | 11,508 | |
| Mine Unit 3 | LT | 3.09 | 2.76 | 0.33 | 2.76 | 0.33 | 9,960 | |
| Total for Two-Track Roads | | 9.44 | 7.98 | 1.46 | 7.98 | 1.46 | 30,429 | |
| TOTAL - ROADS | | 55.93 | 49.05 | 6.88 | 49.05 | 6.88 | 180,287 | |

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| Facility ⁽¹⁾ | Term of Disturbance ⁽²⁾ | Total Disturbance (acres) | Area of Disturbance (acres) | | Area within Disturbance from which Topsoil to be Removed (acres) | | Topsoil Salvage ⁽³⁾ (cubic yards) | Comment |
|---|------------------------------------|---------------------------|-----------------------------|-----------------------|--|-----------------------|--|--|
| | | | Upland Big Sagebrush | Lowland Big Sagebrush | Upland Big Sagebrush | Lowland Big Sagebrush | | |
| PATTERNS (Figure OP-6b) | | | | | | | | |
| Delineation Holes ⁽⁸⁾ | LT | -- | -- | -- | 17.55 | 5.14 | 73,140 | On the order of 300 delineation holes will be drilled per mine unit. Because vegetation disturbance is assumed to be 100% within the pattern area and is accounted for by individual mine unit, delineation holes do not include vegetation disturbance. As a conservative estimate, the highest proportion of Lowland to Upland acreage in a mine unit (Mine Unit 1) was used to estimate the proportion for the delineation holes. |
| Mine Unit 1 | 4.4% LT | 38.05 | 29.43 | 8.62 | 1.29 | 0.38 | 5,397 | Vegetation disturbance within the pattern area is expected to be 100% of the area. Long-term topsoil disturbance is assumed to be 4.4% of the area; Short-term topsoil disturbance is assumed to be 10% of the area. LT stockpiles will be adjacent to header houses; ST stockpiles will be adjacent to feature (e.g., mud pit) or wind-rowed (e.g., pipeline). |
| | 10% ST | | | | 2.94 | 0.86 | 12,265 | |
| Mine Unit 2 | 4.4% LT | 86.34 | 74.44 | 11.90 | 3.28 | 0.52 | 12,246 | |
| | 10% ST | | | | 7.44 | 1.19 | 27,831 | |
| Mine Unit 3 | 4.4% LT | 83.55 | 75.14 | 8.41 | 3.31 | 0.37 | 11,850 | |
| | 10% ST | | | | 7.51 | 0.84 | 26,932 | |
| TOTAL - PATTERNS | | 207.94 | 179.01 | 28.93 | 43.33 | 9.31 | 169,660 | |
| TOTAL DISTURBANCE ⁽⁹⁾ | LT - Topsoil | -- | -- | -- | 84.68 | 18.39 | 332,238 | |
| | ST - Topsoil | -- | -- | -- | 60.02 | 11.73 | 231,295 | |
| | Vegetation | 330.13 | 280.38 | 49.75 | -- | -- | -- | |

⁽¹⁾ Facility locations are shown on Plates OP-1 and OP-2.

⁽²⁾ LT = Long Term topsoil stockpile, i.e., duration of project. ST = Short Term topsoil stockpile, i.e., a few days to a few months.

⁽³⁾ Recommended topsoil stripping depths were 24 inches or less (Attachments OP-5a and 5b). For estimating topsoil salvage volumes, a topsoil depth of 24 inches was used so topsoil stockpile volumes (& associated footprints) would represent the maximum.

⁽⁴⁾ Well WDW1 (SW corner of Permit Area) was the original exploration well drilled in 2008 & the area has been reclaimed.

⁽⁵⁾ The width of disturbance associated with the pipelines was assumed to be: 46 feet for the trunklines; 10 feet for the pipelines to the deep wells; and 10 feet for the pipelines to the mine units. These assumed widths are sufficient to account for the pipeline trench and laydown of topsoil and subsoil.

⁽⁶⁾ Each drill pad, whether for exploration or delineation, is assigned a total disturbance of 33 feet by 33 feet which equates to 0.025 acres. This area accounts for the area of the mud pit, topsoil and subsoil piles, and disturbance to vegetation created during reclamation efforts.

⁽⁷⁾ Two track roads are assumed to create 8.8 feet of disturbance, secondary roads create 20.0 feet of disturbance and primary access roads create 32 feet of disturbance (Figure OP-3c).

⁽⁸⁾ Delineation drilling within the pattern area will be on a 100-foot grid. Depending on geologic interpretation of the delineation hole information, the holes may or may not correspond to subsequent production or injection well locations. As a conservative estimate, it is assumed that none of the hole and well locations coincide. Based on a total of 900 holes (300 holes per mine unit) and a drill pad area of 0.025 acres, a total of about 22.5 acres of topsoil will be stripped for the entire mine. Disturbance to topsoil is about 4 acres for every 37 acres of mine unit (about 160 holes per 37 acres of mine unit).

⁽⁹⁾ No credit is taken for pre-existing disturbance although areas of existing disturbance will be used when available, e.g., roads follow existing two-tracks where possible.