

FORM 8.15A MONITORING PROGRAM SUMMARY

Operator: LCT Energy LP

Operation Name: Rustic Ridge #1 Expansion

Permit #: 65131301

Mark parameters to be measured with an "***"

Monitoring Point No. (4 digits max.)	MNWR-01	INDCR-01	INDCR-02	INDCR-03	CHPCR-DS	CHPCR-D3
Quad Map ID	Donegal	Seven Springs	Seven Springs	Seven Springs	Donegal	Donegal
Latitude (d m s)	40° 04' 54.47"	40° 04' 14.88"	40° 05' 22.64"	40° 06' 02.66"	40° 04' 44.75"	40° 06' 03.57"
Longitude (d m s)	79° 22' 48.87"	79° 21' 28.80"	79° 20' 50.49"	79° 19' 40.79"	79° 22' 49.22"	79° 23' 46.15"
Surface Elevation (ft)	1560	1468	1500	1560	1560	1632
Location Description	Downstream Minnow Run (38363)	Downstream Indian Creek (38235)	Midstream Indian Creek (38235)	Upstream Indian Creek (38235)	Downstream Champion Creek (38337)	Downstream Champion Creek (38337)Outfall 003
Type**	STRM	STRM	STRM	STRM	STRM	STRM
Flow (cfs/gpm)	*	*	*	*	*	*
Water Elevation (ft)						
Field pH	*	*	*	*	*	*
Lab pH	*	*	*	*	*	*
Temperature (°C)	*	*	*	*	*	*
Alkalinity (mg/l)	*	*	*	*	*	*
Acidity (mg/l)	*	*	*	*	*	*
Iron (mg/l)	*	*	*	*	*	*
Manganese (mg/l)	*	*	*	*	*	*
Aluminum (mg/l)	*	*	*	*	*	*
Sulfate (mg/l)	*	*	*	*	*	*
Suspend Solids (mg/l)	*	*	*	*	*	*
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***	*	*	*	*	*	*
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn / yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

(**)Type:

AMBIT - Ambient Location
DMODS - Deep Mine Opening Discharge
DRLHO - Drill Hole
LYSMT - Lysimeter
MDSEP - Mine Drain Seep
MPIMP - Impoundment
LCHDR - Leachate Drain

MPOGW - Oil & Gas Well
MPSED - Sediment Pond
MPTRM - Treatment Facility
MPWEL - Well
MTRWL - Monitoring Well
PDKWL - Private Drinking Well
UNK - Unknown

PF - Primary Facility
PZOMT - Piezometer
SF - Sub Facility
SPRG - Spring
STRM - Steam
UDCRF - Underdrain for Coal Refuse

(***) microSiemens/centimeter

Comments: 1-Monitoring will begin once permit has been approved
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Monitoring Point No. (4 digits max.)	CHPCR-US	CHPCR-M1	28013-01	38390-01	38393-01	38394-01
Quad Map ID	Donegal	Donegal	Seven Springs	Seven Springs	Seven Springs	Seven Springs
Latitude (d m s)	40° 06' 49.10"	40° 06' 06.09"	40° 07' 23.36"	40° 04' 34.58"	40° 05' 09.74"	40° 05' 28.49"
Longitude (d m s)	79° 23' 40.12"	79° 23' 45.11"	79° 21' 29.41"	79° 21' 41.75"	79° 21' 10.66"	79° 20' 50.07"
Surface Elevation (ft)	1734	1634	1555	1535	1514	1520
Location Description	Upstream Champion Creek (38337)	Midstream Champion Creek (38337)	DS UNT #10 of Fourmile Run (43610)	DS UNT #5 to Indian Creek (38390)	DS UNT #10 to Indian Creek (38393)	DS UNT #13 to Indian Creek (38394)
Type**	STRM	STRM	STRM	STRM	STRM	STRM
Flow (cfs/gpm)	*	*	*	*	*	*
Water Elevation (ft)						
Field pH	*	*	*	*	*	*
Lab pH	*	*	*	*	*	*
Temperature (°C)	*	*	*	*	*	*
Alkalinity (mg/l)	*	*	*	*	*	*
Acidity (mg/l)	*	*	*	*	*	*
Iron (mg/l)	*	*	*	*	*	*
Manganese (mg/l)	*	*	*	*	*	*
Aluminum (mg/l)	*	*	*	*	*	*
Sulfate (mg/l)	*	*	*	*	*	*
Suspend Solids (mg/l)	*	*	*	*	*	*
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***	*	*	*	*	*	*
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

(**)Type:

AMBIT - Ambient Location
DMODS - Deep Mine Opening Discharge
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PZOMT - Piezometer
SF - Sub Facility
SPRG - Spring
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Monitoring Point No. (4 digits max.)	38403-01	50550-01	UT CHPCR-01	SW69	SW484	SW485
Quad Map ID	Seven Springs	Seven Springs	Donegal	Donegal	Donegal	Donegal
Latitude (d m s)	40° 06' 31.60"	40° 07' 20.37"	40° 06' 04.48"	40° 05' 46.78"	40° 06' 04.98"	40° 05' 48.57"
Longitude (d m s)	79° 19' 42.86"	79° 21' 28.98"	79° 23' 45.40"	79° 23' 53.64"	79° 23' 41.97"	79° 23' 53.19"
Surface Elevation (ft)	1570	1550	1632	1606	1643	1608
Location Description	DS UNT #23 to Indian Creek (38403)	DS UNT #9 to Fourmile Run (43609)	DS UNT #9 to Champion Creek Outfall 002	DS Champion Creek (38337) Outfall 001	DS Outfall 003 & US Outfall 002	US Champion Creek (38337) Outfall 001
Type**	STRM	STRM	STRM	STRM	STRM	STRM
Flow (cfs/gpm)	*	*	*	*	*	*
Water Elevation (ft)						
Field pH	*	*	*	*	*	*
Lab pH	*	*	*	*	*	*
Temperature (°C)	*	*	*	*	*	*
Alkalinity (mg/l)	*	*	*	*	*	*
Acidity (mg/l)	*	*	*	*	*	*
Iron (mg/l)	*	*	*	*	*	*
Manganese (mg/l)	*	*	*	*	*	*
Aluminum (mg/l)	*	*	*	*	*	*
Sulfate (mg/l)	*	*	*	*	*	*
Suspend Solids (mg/l)	*	*	*	*	*	*
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***	*	*	*	*	*	*
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

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Monitoring Point No. (4 digits max.)	S159	PZ-1D	PZ-1M	PZ-1S	PZ-2D	PZ-2M
Quad Map ID	Seven Springs	Donegal	Donegal	Donegal	Seven Springs	Seven Springs
Latitude (d m s)	40° 05' 41.85"	40° 06' 04.65"	40° 06' 04.62"	40° 06' 04.59"	40° 06' 29.40"	40° 06' 29.33"
Longitude (d m s)	79° 21' 25.15"	79° 23' 40.28"	79° 23' 40.39"	79° 23' 40.48"	79° 21' 11.66"	79° 21' 11.81"
Surface Elevation (ft)	1692	1670.1	1670.3	1670.1	1671.3	1671.3
Location Description	R. Lilly Spring	Piezometer	Piezometer	Piezometer	Piezometer	Piezometer
Type**	SPRG	PZOMT	PZOMT	PZOMT	PZOMT	PZOMT
Flow (cfs/gpm)	*					
Water Elevation (ft)		*	*	*	*	*
Field pH	*					
Lab pH	*					
Temperature (°C)	*					
Alkalinity (mg/l)	*					
Acidity (mg/l)	*					
Iron (mg/l)	*					
Manganese (mg/l)	*					
Aluminum (mg/l)						
Sulfate (mg/l)	*					
Suspend Solids (mg/l)	*					
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***	*					
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

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Monitoring Point No. (4 digits max.)	PZ-2S	PZ-3D	PZ-3M	PZ-3S	PZ-4D	PZ-4M
Quad Map ID	Seven Springs	Seven Springs	Seven Springs	Seven Springs	Seven Springs	Seven Springs
Latitude (d m s)	40° 06' 29.27"	40° 05' 37.51"	40° 05' 37.39"	40° 05' 37.28"	40° 04' 45.59"	40° 04' 45.51"
Longitude (d m s)	79° 21' 11.96"	79° 21' 19.77"	79° 21' 19.74"	79° 21' 19.69"	79° 22' 11.87"	79° 22' 11.97"
Surface Elevation (ft)	1671.6	1741.9	1741.9	1741.6	1715.1	1715.2
Location Description	Piezometer	Piezometer	Piezometer	Piezometer	Piezometer	Piezometer
Type**	PZOMT	PZOMT	PZOMT	PZOMT	PZOMT	PZOMT
Flow (cfs/gpm)						
Water Elevation (ft)	*	*	*	*	*	*
Field pH						
Lab pH						
Temperature (°C)						
Alkalinity (mg/l)						
Acidity (mg/l)						
Iron (mg/l)						
Manganese (mg/l)						
Aluminum (mg/l)						
Sulfate (mg/l)						
Suspend Solids (mg/l)						
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***						
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly
					3	

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3-Piezometer PZ-4D will be utilized as a post-closure mine pool monitoring well upon completion of mining

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Monitoring Point No. (4 digits max.)	PZ-4S	PZ-7D	PZ-9D	SW509	SW510	SW511
Quad Map ID	Seven Springs	Stahlstown	Donegal	Stahlstown	Seven Springs	Seven Springs
Latitude (d m s)	40° 04' 45.41"	40° 08' 47.01"	40° 07' 11.72"	40° 08' 01.63"	40° 06' 58.19"	40° 07' 13.85"
Longitude (d m s)	79° 22' 11.97"	79° 20' 49.37"	79° 23' 49.61"	79° 20' 44.00"	79° 20' 47.06"	79° 21' 50.18"
Surface Elevation (ft)	1716.0	1640.64	1744.06	1761	1700	1517
Location Description	Piezometer	Piezometer	Piezometer	Trib #43592 to Fourmile Run	UNT #31 to Indian Creek	Trib #43610 to Fourmile Run
Type**	PZOMT	PZOMT	PZOMT	STRM	STRM	STRM
Flow (cfs/gpm)				*	*	*
Water Elevation (ft)	*	*	*			
Field pH				*	*	*
Lab pH				*	*	*
Temperature (°C)				*	*	*
Alkalinity (mg/l)				*	*	*
Acidity (mg/l)				*	*	*
Iron (mg/l)				*	*	*
Manganese (mg/l)				*	*	*
Aluminum (mg/l)				*	*	*
Sulfate (mg/l)				*	*	*
Suspend Solids (mg/l)				*	*	*
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***				*	*	*
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

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Monitoring Point No. (4 digits max.)	SW512	SW513	SW514	001	002	003
Quad Map ID	Seven Springs	Seven Springs	Donegal	Donegal	Donegal	Donegal
Latitude (d m s)	40° 07' 20.92"	40° 07' 23.21"	40° 07' 12.81"	40° 05' 50"	40° 06' 05"	40° 06' 04.40"
Longitude (d m s)	79° 22' 13.91"	79° 22' 17.60"	79° 23' 30.36"	79° 23' 49"	79° 23' 44"	79° 23' 45.30"
Surface Elevation (ft)	1480	1485	1630	1614	1636	1639
Location Description	Fourmile Run (43605)	DS UNT #8 to Fourmile Run (43605)	US UNT #8 to Fourmile Run (43605)	Sediment Pond SP-1	Sediment Pond SP-2	Treatment Pond TP-2
Type**	STRM	STRM	STRM	MPSED	MPSED	MPTRM
Flow (cfs/gpm)	*	*	*	*	*	*
Water Elevation (ft)						
Field pH	*	*	*	*	*	*
Lab pH	*	*	*	*	*	*
Temperature (°C)	*	*	*	*	*	*
Alkalinity (mg/l)	*	*	*	*	*	*
Acidity (mg/l)	*	*	*	*	*	*
Iron (mg/l)	*	*	*	*	*	*
Manganese (mg/l)	*	*	*	*	*	*
Aluminum (mg/l)	*	*	*	*	*	*
Sulfate (mg/l)	*	*	*			
Suspend Solids (mg/l)	*	*	*	*	*	*
Dissolved Solids (mg/l)				*	*	*
Specific Conductance (S/cm)***	*	*	*	*	*	*
Osmotic Pressure (mOs/kg)						*
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Bi-Weekly	Bi-Weekly	Bi-Weekly
Selenium (mg/l)						*

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