



City Council Staff Report

Subject: UPDES Stipulated Compliance Order and UPDES Permits
Author: Clint McAfee, Water and Streets Director
Department: Water and Streets
Date: July 31, 2014
Type of Item: Administrative

Summary Recommendations:

Staff recommends Council authorize the City Manager, or her designee, to enter into a Stipulated Compliance Order for the Judge and Spiro Tunnel Utah Pollutant Discharge Elimination System permits between Park City Municipal Corporation and the Utah Division of Water Quality, in a form approved by the City Attorney.

Topic/Description:

Water Rights, Leases, Agreements, Source, Water Quality, Financial Stability, Infrastructure, and Water Conservation

Abbreviations Used in this Report:

EPA: United States Environmental Protection Agency
SCO: Stipulated Compliance Order
DWQ: Utah Division of Water Quality
SWTP: Spiro Water Treatment Plant
QJWTP: Quinn's Junction Water Treatment Plant
UPDES: Utah Pollution Discharge Elimination System
KKR: Kaplan Kirsch and Rockwell
GPM: Gallons per Minute
UPCM: United Park City Mines Company

Important Note: This report is an updated version of the staff report from the March 6, 2014 Council meeting. For clarity and to provide background, staff has highlighted updates to the March 6th report in the color red.

Background:

Prior Authorizations

On January 9, 2014 Park City Council authorized the City Manager, or her designee, to enter into a Stipulated Compliance Order for the Judge and Spiro Tunnel Utah Pollutant Discharge Elimination System permits between Park City Municipal Corporation and the Utah Division of Water Quality, in a form approved by the City Attorney. During the presentation on January 9th, staff noted that there was a possibility of a slight modification of the SCO as a result of a pending final EPA review that would require staff to return to Council for approval. DWQ subsequently requested additional language in the SCO in order to clarify the intention of the agreement.

Staff returned to Council on March 6, 2014 with a revised SCO based on EPA's comments. The revisions included:

- Clarification of the timeframe and duration of a Judge Tunnel bypass during construction of a new water treatment facility.
- A code reference was corrected in Section 15 of the SCO.
- Language modifications to clarify that the location of a new water treatment facility is not limited to the existing SWTP site.
- Several of the deadlines in the SCO were extended in favor of Park City.

During the March 6, 2014 Council meeting, staff again noted that there was potential for the SCO to change based on a pending EPA review and that these changes would require staff to return to Council for approval. During the March 6, 2014 Council meeting, Park City Council authorized the City Manager, or her designee, to enter into a Stipulated Compliance Order for the Judge and Spiro Tunnel Utah Pollutant Discharge Elimination System permits between Park City Municipal Corporation and the Utah Division of Water Quality, in a form approved by the City Attorney.

Project Background

In 2009, EPA Region 8 and DWQ directed Park City to obtain UPDES permits for Judge Tunnel and Spiro Tunnel as required by the Clean Water Act. In July 2011, Park City submitted initial applications and in February 2012 Park City submitted revised applications for UPDES permits (permits) at each source. Over the past several years, water staff has been working with DWQ to establish a reasonable time period for Park City to come into compliance with the permits. The basis of staff's argument that Park City needs time to comply with the permits is that planning, designing, and constructing infrastructure to comply with the permits will be extremely complicated and expensive and will place a severe financial burden on the rate payers of Park City. During this time, staff has gained support from EPA Region 8 and DWQ for extended compliance periods.

Over the course of many long meetings with DWQ, staff has successfully demonstrated the complexity, cost, and financial burden associated with compliance and DWQ has agreed to an extended compliance period. It should be noted that the length of the proposed time periods are extremely unusual and beneficial to Park City. By extending the compliance date, staff will be able to better plan and construct a comprehensive tunnel treatment system. Extended compliance also means delayed cost of infrastructure and eliminates many years of debt service payments and operational costs, which would amount to millions of dollars per year.

The SCO is an agreement between DWQ and Park City that was created to outline the schedule and other terms of Park City coming into compliance with the Judge and Spiro Permits. While UPDES permits require renewal every 5 years, the SCO is designed to span the entire compliance period which could be as long as 19 years. After the compliance period, Park City will be required to comply with UPDES permits in

perpetuity. During the compliance period the UPDES permits will be “report only”. This allows Park City time to come into compliance with the Clean Water Act, thereby reducing our legal exposure. Further, because these are report only permits, there are no water quality limits or standards that Park City can violate during the compliance period. Park City agreed that, in general, Judge Tunnel would be addressed first and then Spiro Tunnel. This approach generally compliments Park City’s goal of improving water quality in our drinking water system and securing the City’s water sources as treatment of Judge will have a significant improvement on Park City’s water quality in the distribution system.

Judge Tunnel

The portal of the Judge Tunnel is located in Empire Canyon. Until recently, the water discharged from the portal has been used as a drinking water source for many decades. This water has entered the potable water system after disinfection using chlorine gas. When the water is turbid or the water is not needed in the distribution system, it has been discharged into an ephemeral drainage channel in Empire Canyon prior to being exposed to chlorine. Due to a variety of water quality concerns and the availability of water produced from QJWTP, staff discontinued the use of the Judge Tunnel as a drinking water source in June of 2013. Under the terms of a separate agreement with the Division of Drinking Water, Judge water was prohibited from further use in the distribution system without additional treatment for antimony starting June 14, 2014. The water that is currently being discharged into the drainage channel also exceeds several additional parameters included in the proposed UPDES permit for Judge Tunnel.

Several citizens have reported that they have perceived an improvement in water quality since we stopped using Judge as a potable water source in June of 2013. Most of these reports describe household water filters being much cleaner and lasting longer than they have in the past. This is likely due to the iron and manganese reduction as a result of diverting Judge out of our distribution system. In the future, treatment of the Judge water will result in further improvements to water quality. Recently, staff has confirmed this water quality improvement during routine water sampling in eight areas of the distribution system. These samples have shown significant reduction of antimony, arsenic, cadmium, iron, lead and manganese levels in the distribution system. Staff attributes these improvements directly to the diversion of the Judge Tunnel water.

It is important to highlight that the diversion of Judge Tunnel water has resulted in an increased flow of water in the drainage channel which will continue until infrastructure to convey and treat Judge Tunnel is complete. At the completion of this construction, and the corresponding deadline per the SCO, water will no longer be discharged into Empire Canyon from Judge Tunnel and the drainage channel will return to its historic condition as an ephemeral drainage channel. In 2013, as part of a plan to convey Judge Tunnel water to a future treatment facility near the existing SWTP or QJWTP, Council approved the construction of a pipeline running from Judge Tunnel to the existing SWTP site. This pipeline, which was recommended by staff based on an alternatives analysis,

essentially precludes treatment and subsequent discharge of Judge Tunnel water in Empire Canyon in the future.

The flow rate from the tunnel ranges from about 700 gallons per minute (gpm) to over 2,000 gpm with an average flow rate of about 1,200 gpm. Park City effectively has the right to use all of the water coming from the Judge Tunnel.

UPCM owns the tunnel, the infrastructure near the portal, and the land near the portal. The land under which the tunnel was driven is now owned by several entities including Talisker and Deer Valley Resort Company. Park City has an easement in the Tunnel running ten feet either side of the tunnel's centerline; the scope of the easement is to maintain and operate the Tunnel and the waterworks facilities near the portal.

Spiro Tunnel

The portal of the Spiro Tunnel is located west of the existing SWTP and within the Silver Star Development. A portion of the water draining from the Tunnel has been used by Park City for decades. At first it was chlorinated and mixed with Judge Tunnel water and a controlled blend of Thiriot Springs water to reduce arsenic. In about 1990, the first phase of the SWTP was constructed in order to remove arsenic, manganese, iron, thallium, and turbidity from the water prior to entering the potable water system. Controlled blending of Thiriot Springs and treated SWTP waters was also implemented for antimony compliance. Over the years, SWTP has received several process and capacity upgrades, however it is not able to treat to stream standards as will be required by a future UPDES permit and can only treat a portion of the total flow from the tunnel. Water not treated at the SWTP is discharged into the North and East Ditches, which run through the Park City Municipal Golf Course. Other entities with water rights in the Spiro Tunnel are Salt Lake City Corporation and Park City Mountain Resort. Also, a portion of the Tunnel flow is considered to be tributary to the East Canyon drainage and is to remain un-diverted and allowed to run down McLeod Creek. Uses for the Spiro Tunnel water include municipal, golf course irrigation, snowmaking, and agricultural use.

The flow rate from the tunnel averages about 4,500 gpm with peak flow rates above 8,000 gpm. Much like Judge, Park City has an easement in the Tunnel to maintain and operate the Tunnel and the waterworks facilities near the portal.

Analysis:

The SCO outlines 3 main potential solutions to achieve compliance with future UPDES permit limits. As mentioned earlier in this report, Judge Tunnel is to be addressed first followed by Spiro Tunnel and each of the 3 solutions has 2 phases as described below. Staff ensured great flexibility in the drafting of the SCO in terms of choosing solutions that will maximize the benefit to the City. The best solution for the City may not be the least expensive; rather it will be the optimal combination of cost, water quality, schedule, and other key factors.

Rather than providing a comparative analysis of each solution, the outline below focuses on what is contained in the SCO. A complex and in depth decision making process will occur during the compliance period evaluating many factors including cost, impacts to the City, water quality, operational redundancy, and security.

Interim Solution for Judge Tunnel (time period: present to 2024)

Staff has identified 3 potential solutions for compliance with drinking water standards and the UPDES permits for Judge. The completion dates for each solution per the SCO are included below. After a comprehensive analysis of all options, only one solution will be selected. This analysis and selection process will occur in the next several years.

Due to the delay in executing this agreement, staff has renegotiated various near term dates in the SCO. These dates are shown below and in Exhibit A of this staff report.

1. Treat Judge at the existing Quinns Junction Water Treatment Plant (QJWTP).
Completion date: **December 31, 2022.**
 - a. Potential Infrastructure includes:
 - i. Pipeline from Judge to QJWTP.
 - ii. Expansion of QJWTP.
 - iii. Potential pretreatment of Judge Tunnel Water.
 - iv. Dewatering at QJWTP.
2. Treat Judge at the existing SWTP. Completion date: **December 31, 2022.**
 - a. Potential Infrastructure includes:
 - i. Pipeline from Judge to SWTP.
 - ii. Modification and upgrades of the existing SWTP.
 - iii. Dewatering upgrades at SWTP.
3. Treat Judge at a new treatment facility at or near the existing SWTP site.
Completion date: January 1, 2024.
 - a. Potential Infrastructure includes:
 - i. Pipeline from Judge to SWTP.
 - ii. Demolition of the existing SWTP.
 - iii. Potential relocation of Golf and/or Parks facilities.
 - iv. Potential modification to portions of the Golf Course.
 - v. Construction of a new SWTP to treat Judge and to be expandable in the future to treat Spiro water.
 - vi. NOTE: an alternative to demolition of the existing SWTP and relocating other City facilities would be to find an alternative location for the new tunnel treatment facility similar to location and size of the existing site.

It is important to note that with option 3 there could be impacts to the Park City Municipal Golf Course that include localized modifications. Staff understands the year

round importance and value this amenity has to the community for both golfers and non-golfers alike and the goal with any construction at this location will be to mitigate any impacts to the amenity.

There are significant advantages to the existing SWTP site, or a site in close proximity to the golf course including:

- It is the headwaters of McLeod Creek. Locating the treatment facility elsewhere would require pumping water back to this location for discharge which would consume massive amounts of energy and require significant infrastructure.
- It allows for separation of the City's mine tunnel treatment system from the surface water treatment system at QJWTP. This greatly simplifies operations and infrastructure required.
- System redundancy. This facility would be independent of other facilities providing treatment and source redundancy for the City's water system.
- It complements concepts put forth in the Western Summit County Project (aka Regional Water Project) by keeping the future capacity in QJWTP available for treatment of additional imported surface water in the future.

Final Solution for Judge and Spiro Tunnels (time period: 2025 – 2033)

Depending on the interim solution that is selected for Judge (see above), the final solution for both Judge and Spiro will be either a combined tunnel treatment facility for both sources, or the addition of a facility to treat Spiro only.

Below are the second phases of the 3 solutions presented above. After a comprehensive analysis of all options, only one solution will be selected. This analysis and selection will occur over the next several years.

1. New treatment facility for Spiro discharge:
 - a. Construct treatment facilities to treat Spiro Tunnel water.
 - b. This could include reconstruction of the existing SWTP in its current location or a nearby location.
 - c. Judge would continue to be treated at QJWTP.
 - d. If cost is less than \$12.5 M, completion date is: January 1, 2025.
 - e. If cost is more than \$12.5 M, completion date is: January 1, 2033.
2. Demolish and construction of a new facility capable of treating Judge and Spiro Tunnel discharges.
 - a. If cost is less than \$12.5 M, completion date is: January 1, 2025.
 - b. If cost is more than \$12.5 M, completion date is: January 1, 2033.
3. Expand new treatment facility that was constructed per interim option 3 above.
 - a. If cost is less than \$12.5 M, completion date is: January 1, 2025.
 - b. If cost is more than \$12.5 M, completion date is: January 1, 2033.

Again, many factors are involved in determining which solution to implement. These discussions will occur later as we approach the deadline per the SCO and as we gain a better understanding of each solution. Flexibility was one of the main outcomes of the negotiated compliance period and I think we have achieved this to the maximum extent tolerated by the DWQ.

Revisions and Additions to Permit Documents

In 2004, the EPA approved a TMDL study on zinc and cadmium for Silver Creek. As a result of both Spiro and Judge discharging into Silver Creek the EPA requested additions to the Fact Sheet/Statement of Basis and the UPDES Permits (permit documents) for both the Judge and Spiro Tunnels. The additions clarify that Spiro and Judge were determined to be minor contributors of zinc to Silver Creek while the majority of the loading was from non-point sources in the various reaches of Silver Creek, almost all of which are outside of PCMC's control. The additions also recognized that the current discharges will remain in place until treatment infrastructure can be completed as required by the SCO.

A section describing the quantitative reasonable potential analysis that was conducted for the Spiro and Judge Discharges is now included in the permit documents. This section describes the analysis that was conducted on water samples collected by Park City in order to determine what parameters have reasonable potential to exceed water quality standards and therefore should be included in the permits.

A section was added describing the benefit of reducing the volume of Judge Tunnel water discharged into Silver Creek by using Judge Tunnel water in the distribution system after treatment at the existing SWTP. Staff will determine if the existing process at SWTP is suitable to treat Judge Tunnel water to levels that meet Park City's water quality goals. If staff determines that the existing process is suitable, Park City may elect to treat some portion of Judge Tunnel water at the existing SWTP.

Finally, a requirement was added that Park City shall install BMP's near the existing water facilities in Empire Canyon to reduce the amount of solids entering Silver Creek from the Judge Tunnel. These BMP's will need to be installed by January 1, 2016 and will include a screening system and minor modifications to the Empire Tank to allow settling of the Judge Tunnel water prior to entering Silver Creek. There is no monitoring required with these BMP's and a screening/settling system will benefit the long term solution for the Judge Tunnel discharge.

Next Steps

Once Staff received Council authorization to execute the SCO, Park City will sign the SCO and the SCO and permit documents will be made available for a minimum of 30 days for public comment. If no substantive comments are received, DWQ will execute the SCO and permits. If revisions are required due to public comment, the process will

start again with Staff returning to Council for approval of the changes, public comment, and execution.

Department Review:

This report has been reviewed by representatives of Public Works, Legal, and the City Manager's Office and their comments have been integrated into this report.

Alternatives:

A. Approve:

Council could authorize the City Manager to enter into a Stipulated Compliance Order for the Judge and Spiro Tunnel Utah Pollutant Discharge Elimination System permits between Park City Municipal Corporation and the Utah Division of Water Quality, in a form approved by the City Attorney.

B. Deny:

Council could deny the request for authorization. This would delay execution of the SCO, require Staff to re-enter negotiations with DWQ, and delay compliance with the Clean Water Act.

C. Modify:

Council could request modifications to the SCO. This would delay execution of the SCO, require Staff to re-enter negotiations with DWQ, and delay compliance with the Clean Water Act.



D. Continue the Item:

This would have a similar effect as requesting a modification.

E. Do Nothing:

This would have a similar effect as requesting a modification.

Significant Impacts:

	Preserving & Enhancing the Natural Environment (Environmental Impact)	Responsive, Cutting- Edge & Effective Government
Which Desired Outcomes might the Recommended Action Impact?	<ul style="list-style-type: none"> + Managed natural resources balancing ecosystem needs + Enhanced water quality and high customer confidence + Effective water conservation program + Adequate and reliable water supply 	+ Fiscally and legally sound
Assessment of Overall Impact on Council Priority (<i>Quality of Life Impact</i>)	Very Positive 	Very Positive 

Funding Source:

There are no direct costs associated with execution of the SCO. Budget requests for infrastructure described in the SCO will be brought to Council during future budget cycles and will be funded by water service fees. Entering this SCO does guarantee future capital expenditures and these will have rate impacts.

Consequences of not taking the recommended action:

Not taking the recommended action could delay the execution of the SCO and issuance of the UPDES permits for the Judge and Spiro Tunnel discharges. Under the Clean Water Act, Park City is required to obtain UPDES permits for these discharges and the SCO allows for a reasonable amount of time to comply with the permits. Denying the request to execute the SCO could eliminate the compliance period and the City would be in violation of the pending UPDES permits.

Recommendation:

Staff recommends Council authorize the City Manager, or her designee, to enter into a Stipulated Compliance Order for the Judge and Spiro Tunnel Utah Pollutant Discharge Elimination System permits between Park City Municipal Corporation and the Utah Division of Water Quality, in a form approved by the City Attorney.

Exhibits:

EXHIBIT A: SCO